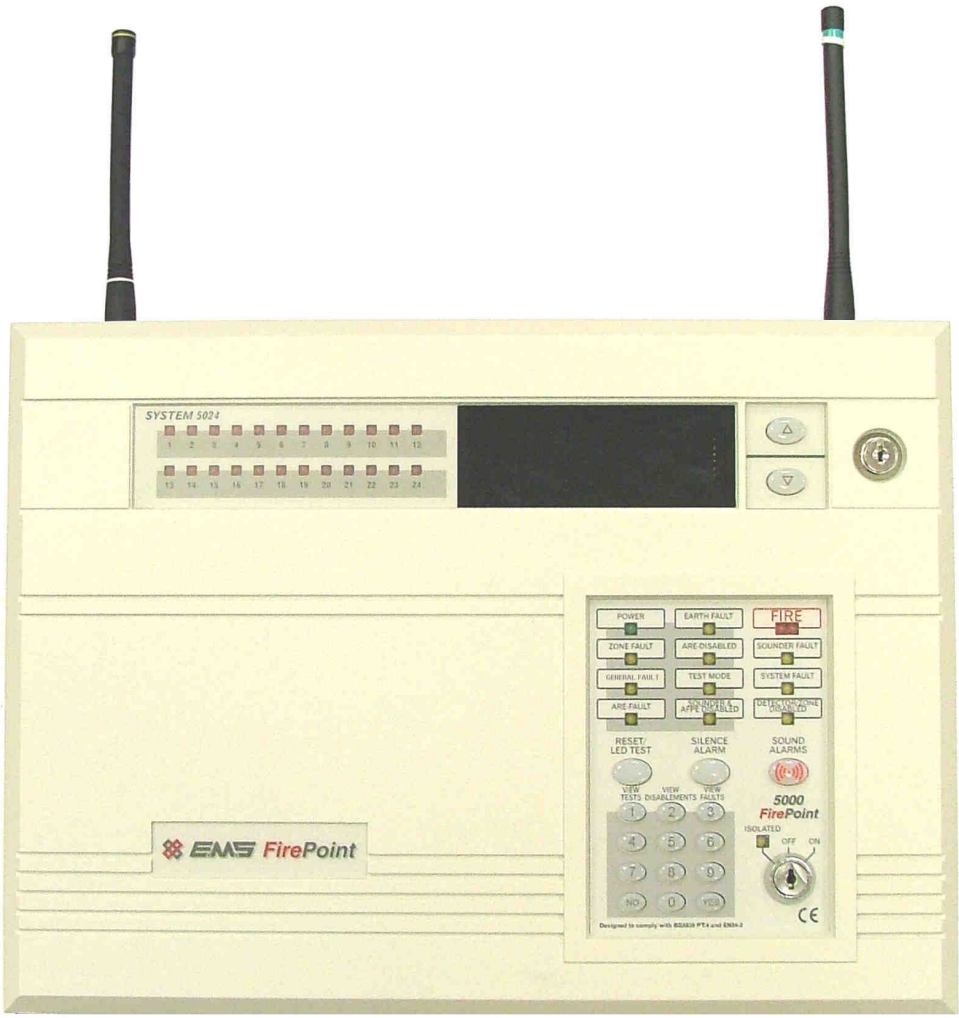
FirePoint

5000



INSTALLATION MANUAL

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1. Introduction

This manual provides an installation guide to the EMS 5000 FirePoint, Fire Control Panel and peripheral devices. It is important that for correct installation, the instructions given in this manual are followed. Should you have any questions regarding the installation of the System 5000, please ring our technical Helpline No 08712 710804 (0800-1800 Mon-Fri), or alternatively your regional technical support representative.

Whilst this manual provides an overall installation guide, refer to the User Manual for details on how to operate the system.

2. Warnings and Cautions

It is very important that the procedures in this installation manual are carefully followed. This will prevent injury.

The user of this manual should be a suitably trained installer and should be familiar with all of the relevant regulations.

When installing EMS 5000 FirePoint Control Panel Unit and peripherals, it is important to use the correct fixings, which are suitable for the type of surface being secured to.

System 5000 includes components, susceptible to damage from Electro Static Discharge (ESD). These components can be permanently damaged through routine handling, if precautions are not observed. Where handling is unavoidable, adequate earthing precautions should be taken. E.g. an earthed wrist strap.

Minimise the handling of static sensitive PCB devices. Also always transport "loose" PCB's in containers, manufactured with ESD protective properties. Also avoid placing static sensitive devices on plastic surfaces.

This panel is CE Marked to show that it conforms to the requirements of the European Community Directives

3. Unpacking

5000 FirePoint control panels are simple to install, provided that the recommended procedures in this manual are followed. Refer to the Engineers Operating Guide for details on the programming of system operation, and the User Manual for the overall system operation.

Care should be taken when handling 5000 FirePoint. Dropping any of the parts onto hard surfaces may cause damage to the case and internal circuitry.

Products should be kept in their packaging until installation. This minimises any risk of damage. Retain all packaging until the installation activities have been completed. Any products surplus to requirements, or requiring returning to EMS, should be returned in the original packaging.

CONTROL PANELS ARE SUPPLIED WITH ALL DETECTOR ZONES IN TEST. PLEASE REFER TO THE ENGINEERS OPERATING GUIDE TO MAKE ACTIVE.

4. Installation

Following the Site Survey, System Control Panels should be positioned as stated considering:-

The recommended minimum distance between metal objects or equipment for the aerial is 400mm.

The recommended minimum distance to any electrical equipment is 2 metres, (See Figure 1).

5. Control Panel - Removing Items before Mounting

Before mounting the unit, it is necessary that certain items be removed, so as to prevent the risk of damage to the internal circuitry.

Remove the Door Assembly from the Back Box. To achieve this, disconnect the Ribbon Cables and Earth links, loosen the hinge screws on the Back Box side of the hinge and pull the door away. Ensure that the Door Assembly is suitably stored and that ESD precautions are observed (see Figure 2).

Establish the required cable entries. Knockouts should be made prior to fixing the Back Box to the wall.

Ensure that the Back Box is free of swarf and other debris.

6. Mounting the Enclosure to a Wall

It is recommended that the Control Panel be mounted in accordance with the site survey so that the display is at eye level.

Achieve this firstly by securing it to the wall, via the single fixing "keyhole", located in the top centre of the box. The box should be hung and levelled, allowing holes to be marked out for each of the four remaining mounting holes (shown on figure 3).

Once the Back Box is fitted to the wall, all external cabling should be run to the box, including the provision of an unswitched 240 volt supply. The mains cable should be dressed away from the main radio PCB and should be as short as possible.

7. Replacing Items after Mounting

Replace the Door assembly by reversing the steps given in Section 5, ensuring that all electrical connections, including the earth leads, are made.

Ensure that both UHF and VHF aerials are fitted to the top of the Control Panel. To ensure correct fitment, the aerial identified with the coloured band must be fitted to the connector identified with the coloured band. If high gain aerials are to be used they must be positioned in accordance with the site survey.

8. Mounting Diagrams

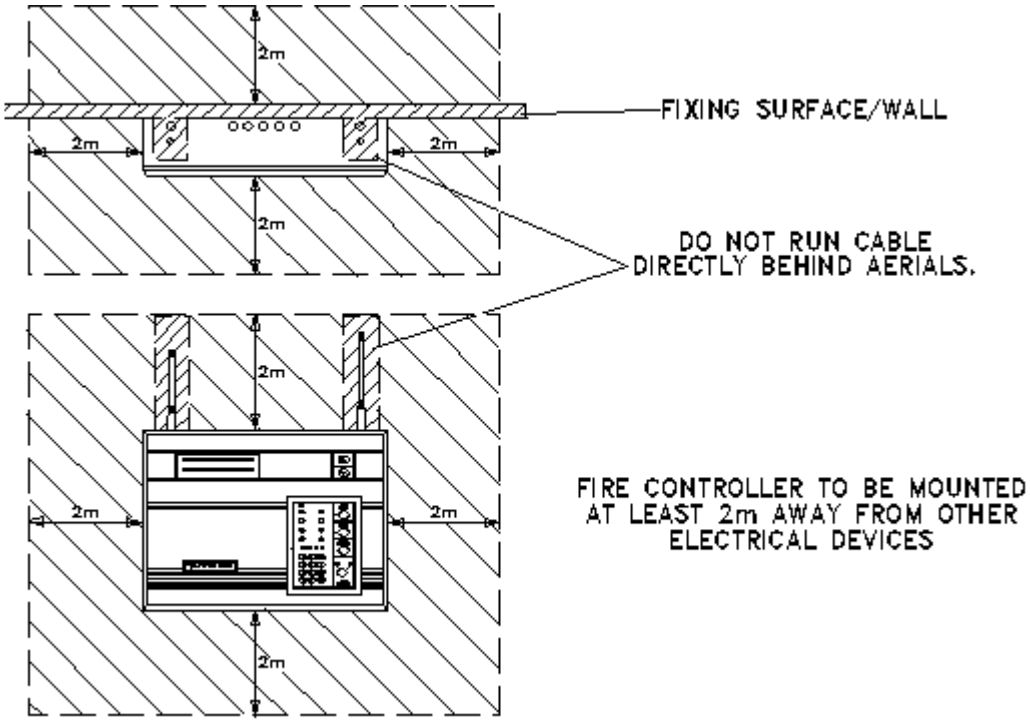


Figure 1

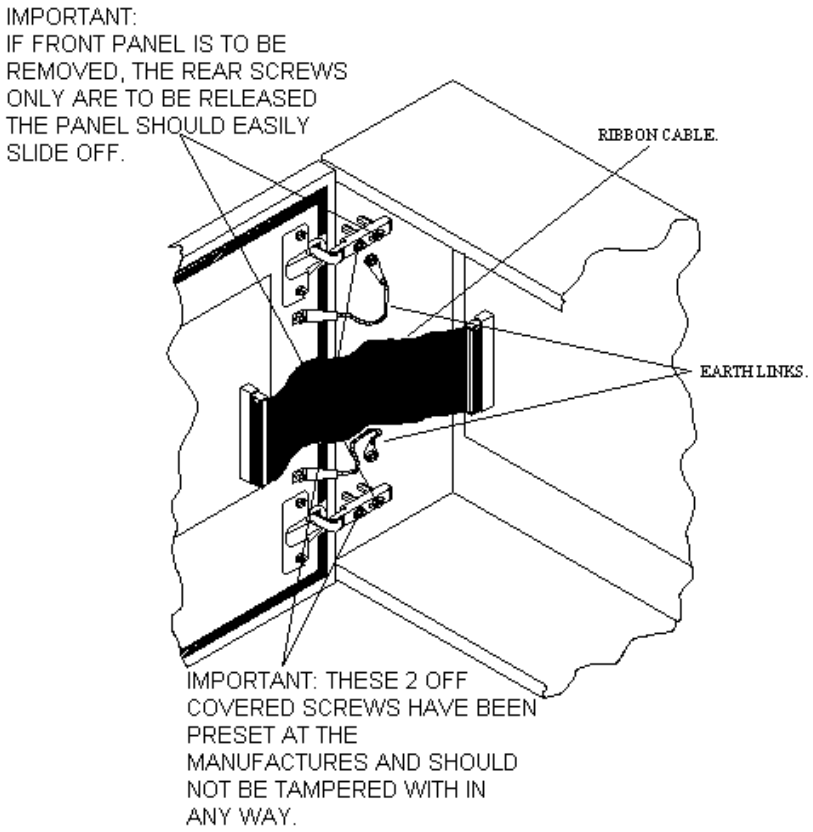


Figure 2

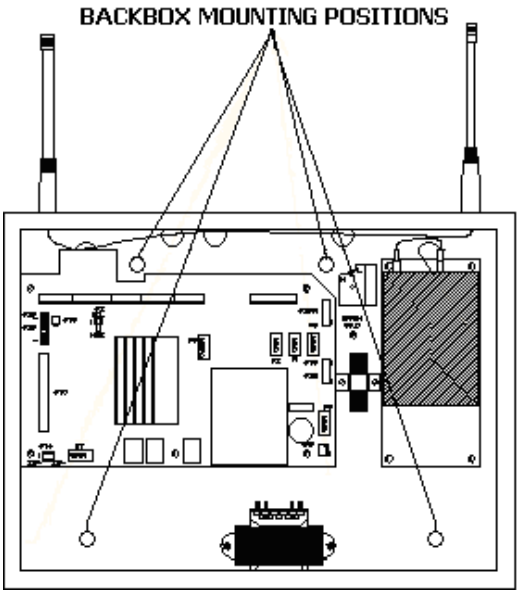


Figure 3

9. Powering the System

The 5000 FirePoint Control Panel has an internal 3 amp power supply and charger as standard. On larger systems and where hard-wired sounder circuits are used, it may be necessary to provide an additional power supply or increase the size of the system power supply and charger. When using an additional power supply, it should be mounted in an appropriate cabinet adjacent to the control panel. Should this be impractical, the maximum distance between the Control Panel and power supply/charger should not exceed 3 metres. Ensure that the voltage drop between the supply and the main panel does not exceed 0.5v.

The 240V power supply to the Control Panel must be made by way of an individual fused spur, situated adjacent to the Control Panel. The fused spur must have it's own power supply circuit fitted with a 3 Amp fuse. Affix a red circuit breaker, labelled "Fire Alarm, Do Not Switch Off", to the circuit. It is recommended that the circuit breaker be secured from unauthorised access. The fused spur should be similarly labelled as "Fire Alarm".

When powering up, the following procedure must be followed.

If the panel is switched off, apply the mains power to the unit and connect the batteries (observing the correct polarity).

After the system has completed its initialisation sequence, the display will show, Figure 4 followed by Figure 5

Warm Start
FIRIS OS V1.6

Figure 4

Searching . . . . . .
01 02 03 04 05 06

Figure 5

When the Control Panel is first powered up, the "General Fault" LED will illuminate and the fault buzzer will sound. This continues whilst the system initialises itself and runs through self-test routines.

Once initialised, the green "Power" LED will illuminate. At this time the "General Fault" LED will also be illuminated, whilst the display will indicate a "PR" fault. Press "SILENCE ALARM" followed by "RESET" to clear this LED. The Control Panel will run through a series of diagnostic self tests. The illumination of the applicable LED and the sounding of the fault buzzer will indicate any errors on the display.

Under normal non fault conditions, the display will indicate status as "Normal" (see Figure 6). If the Key Switch is left in the "On" position, the display will indicate that the panel is in "Access mode" (see Figure 7).

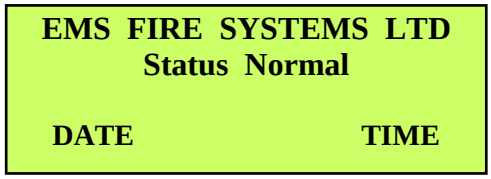


Figure 6

Figure 7

10. External Wiring

10.1 Hardwired Sounder

The 5000 FirePoint Control Panel includes provision for two hardwired sounder circuits. The circuitry monitors two pairs of conductors fitted with 4k7 End of Line resistors. No connection to the control Panel should be made at this stage. The maximum current permitted is 250mA per circuit.

10.2 Hardwired Call Point

The 5000 FirePoint Control Panel includes provision for a hardwired Call Point interface. The Control Panel monitors this input via a 4k7 End of Line resistor. No connection to the Control Panel should be made at this stage.

Note: The external connections & wiring must be tested in the conventional manner. Under no circumstances should the system circuitry be tested using a meggar tester, once the connections to the control panel, or peripherals, has been made.

10.3 Device Wiring

Using an Ohmmeter, check both sounder circuits to ensure that they have a 4.7k ohm resistance across the connections and that the resistance between each connection and the Control Panel earth point is greater than 20 M Ohm.

Check any Call Point external wiring. The resistance across the Call Point connection should read 4.7k. Ensure that the resistance between each connection and the Control Panel earth point is greater than 20 M Ohm.

Once external wiring circuits have been checked, make the connections to the control panel. The Control Panel should be powered down prior to termination. Connect all external wiring to the applicable Control Panel terminals (see drawing p02910). Upon completion of this, re-power the Control Panel.

11. Installation Advice.

Ensure that you have all equipment required to complete the installation of 5000 FirePoint.

Ensure that the correct fixings and fasteners are used for all installation work.

Observe ESD precautions.

Familiarise yourself with the system details and layout, before commencing any installation activity. Any anomalies must be addressed with the Surveyor, End user or the equipment supplier.

Ensure that the Control Panel back box is clean and free of swarf prior to fitting the internal assemblies.

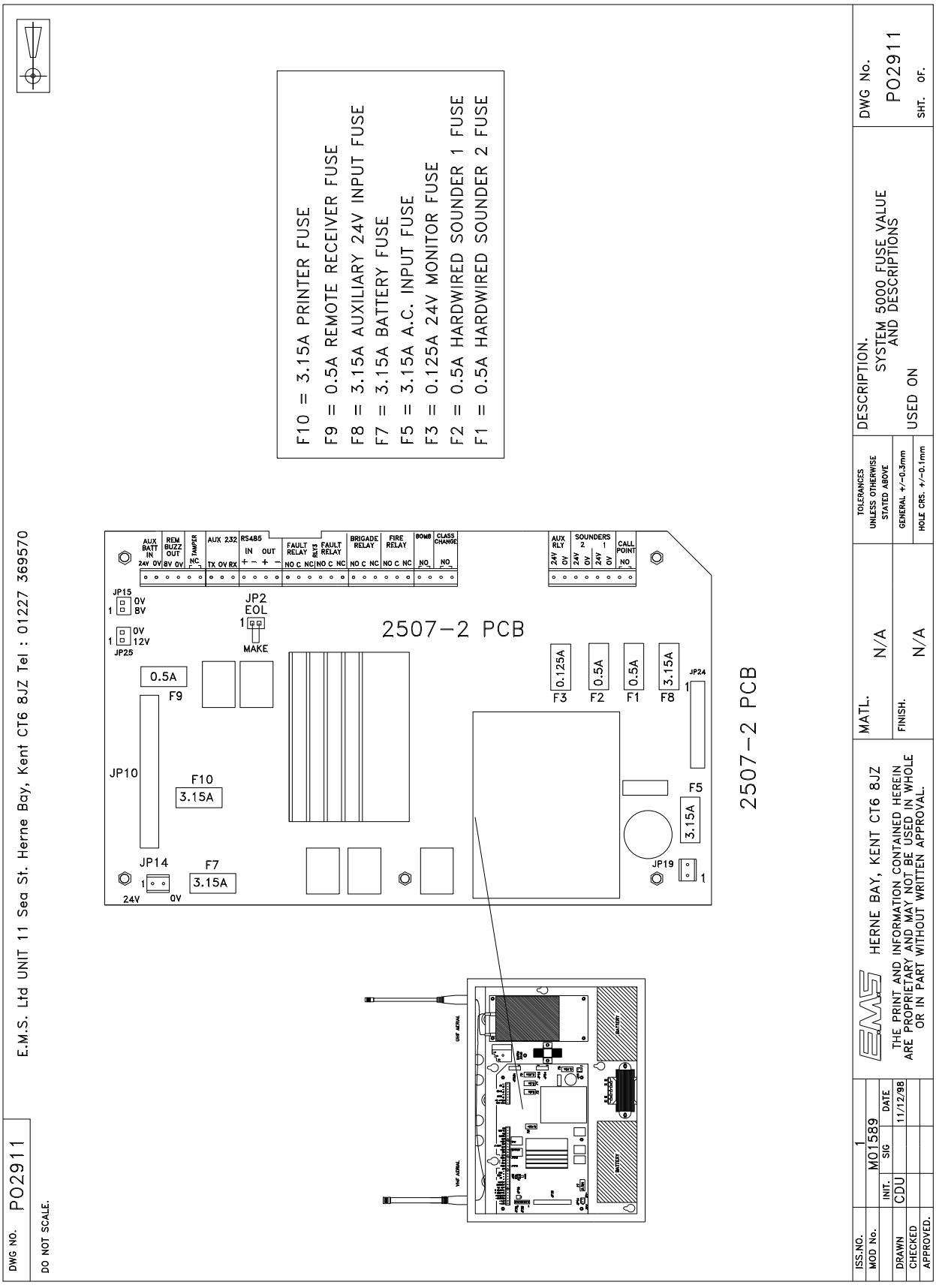
Also ensure that aerials are fitted with anti tamper cones before applying 230V to the control panel.

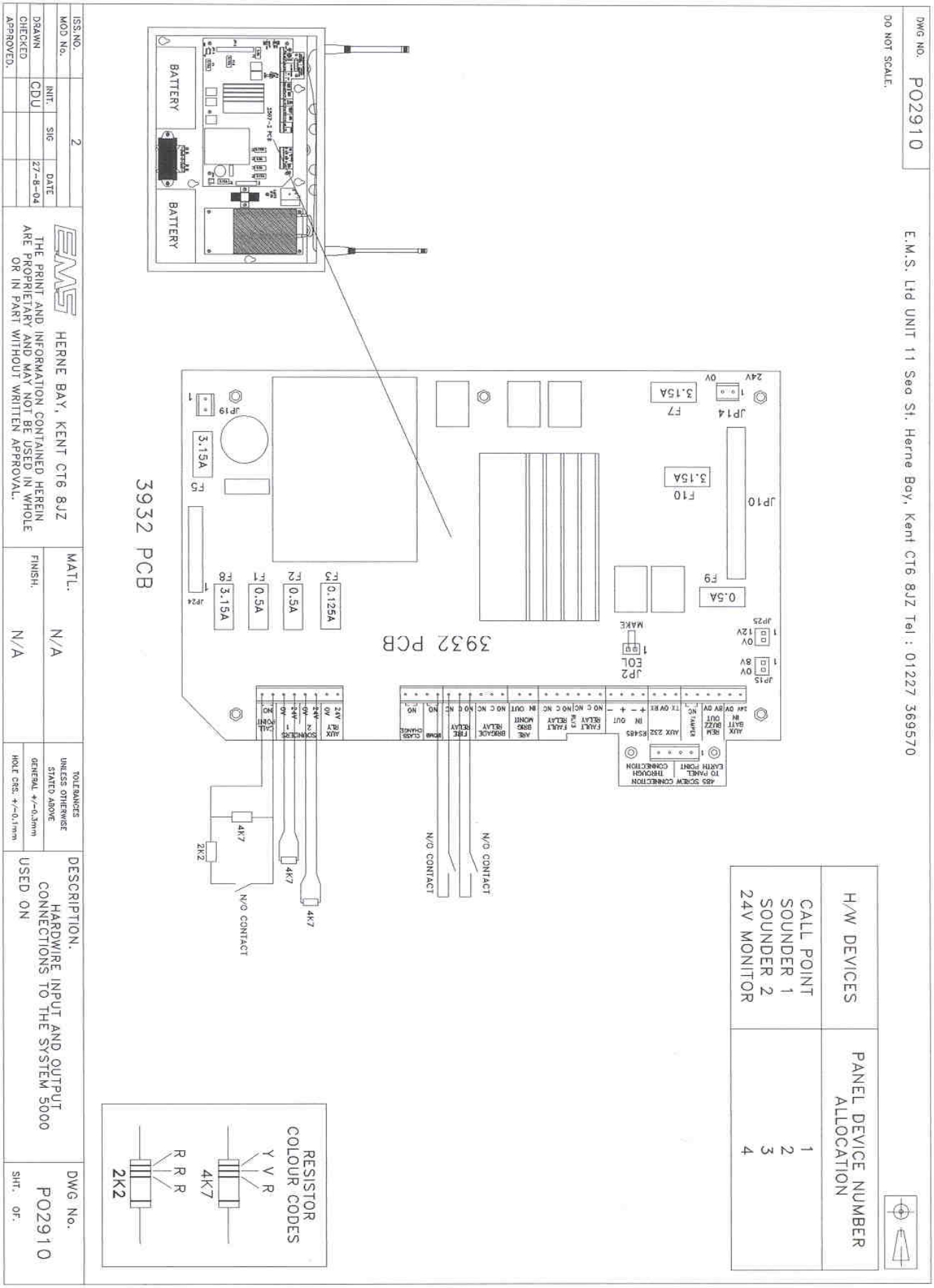
The 240V power supply to the Control Panel must be made by way of an individual fused spur, situated adjacent to the Control Panel. The fused spur must have it's own power supply circuit fitted with a 3 Amp fuse. Affix a red circuit breaker, labelled "Fire Alarm, Do Not Switch Off", to the circuit. It is recommended that the circuit breaker be secured from unauthorised access. The fused spur should be similarly labelled as "Fire Alarm".

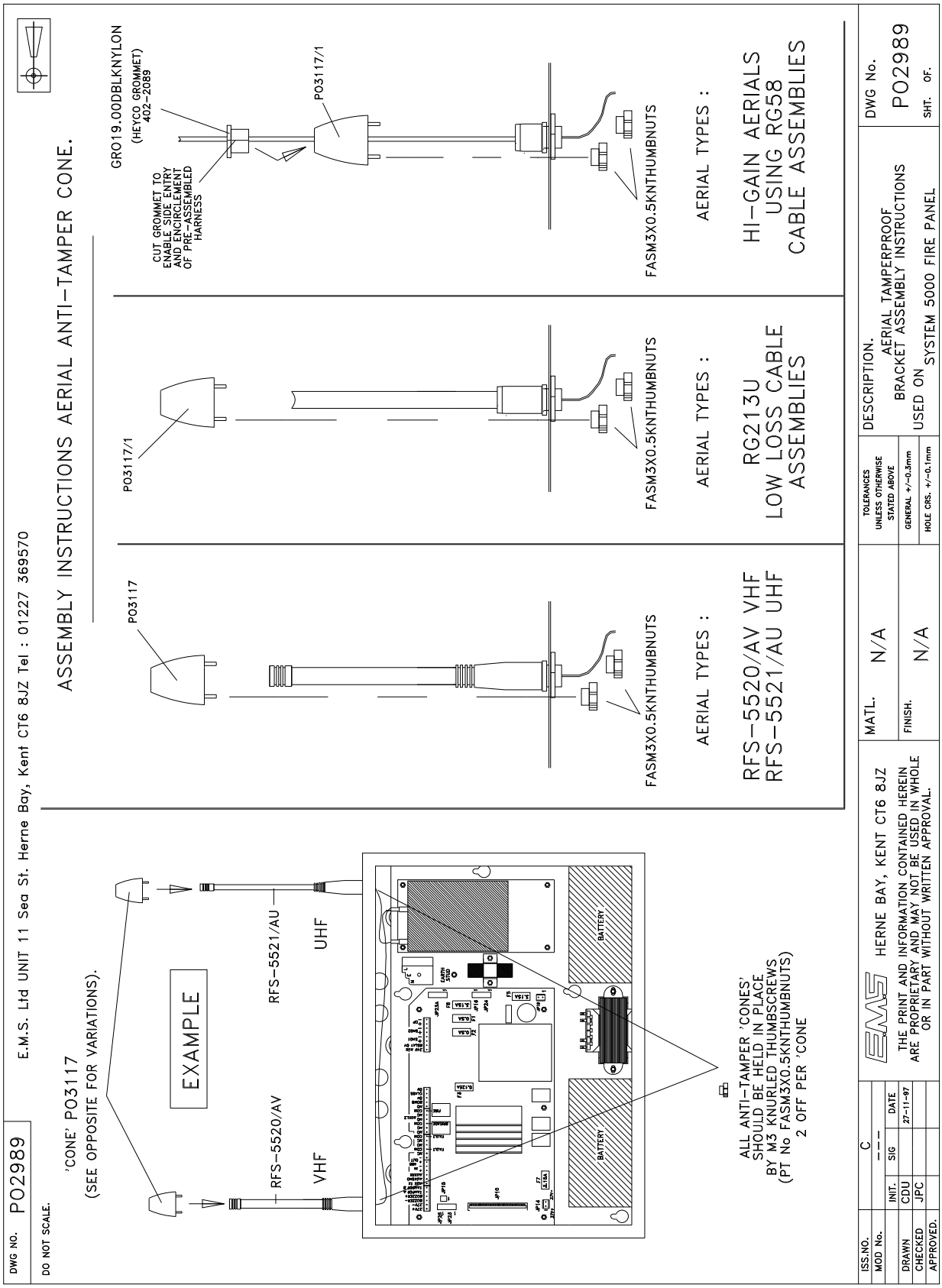
Wherever practical, fix detectors so that the red LED faces the main entrance to the room.

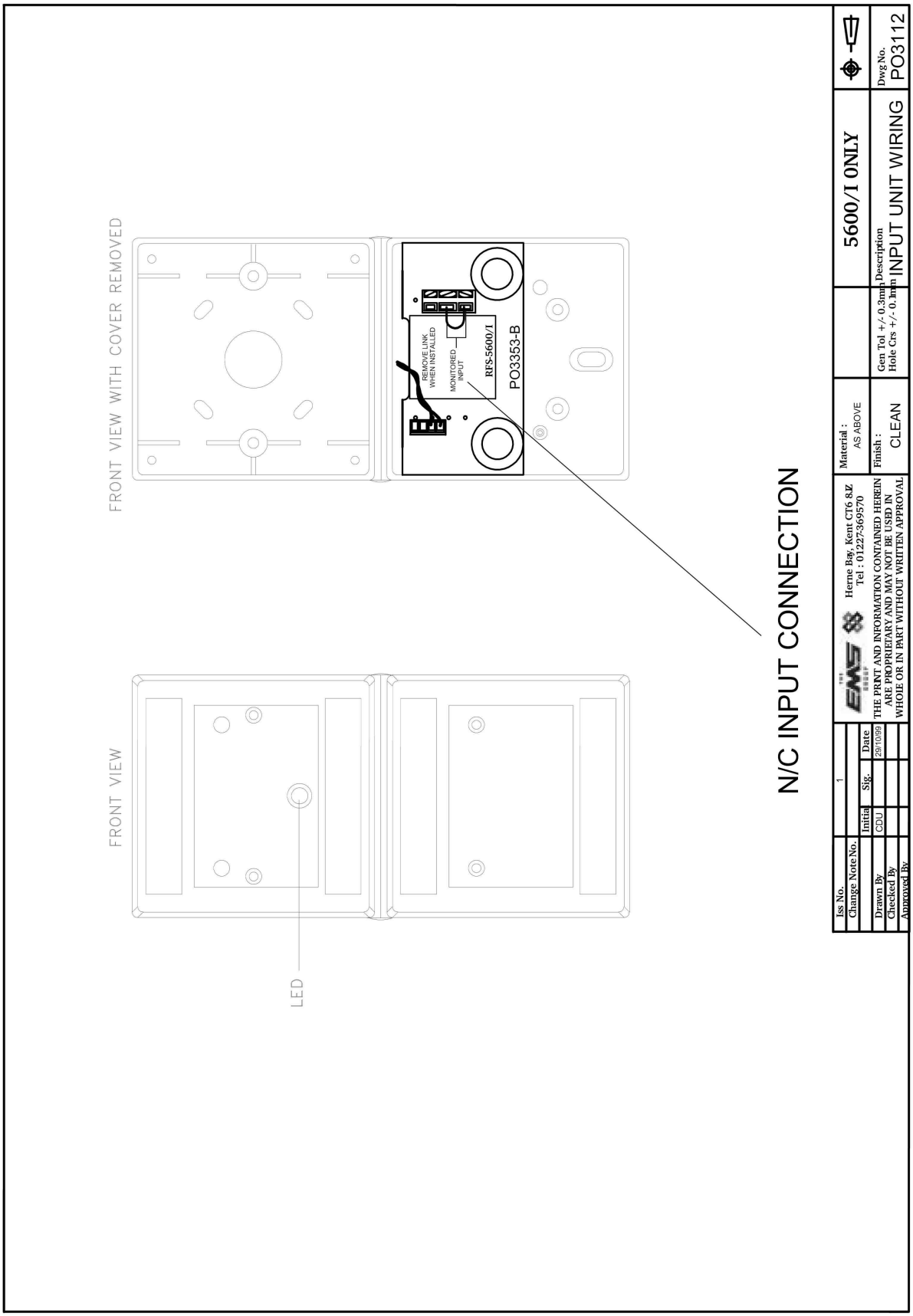
Should it be necessary to remove the two aerials fitted to the Control Panel, ensure that when refitted, the coloured band on the aerial corresponds with the coloured disk on the BNC connector on the panel.

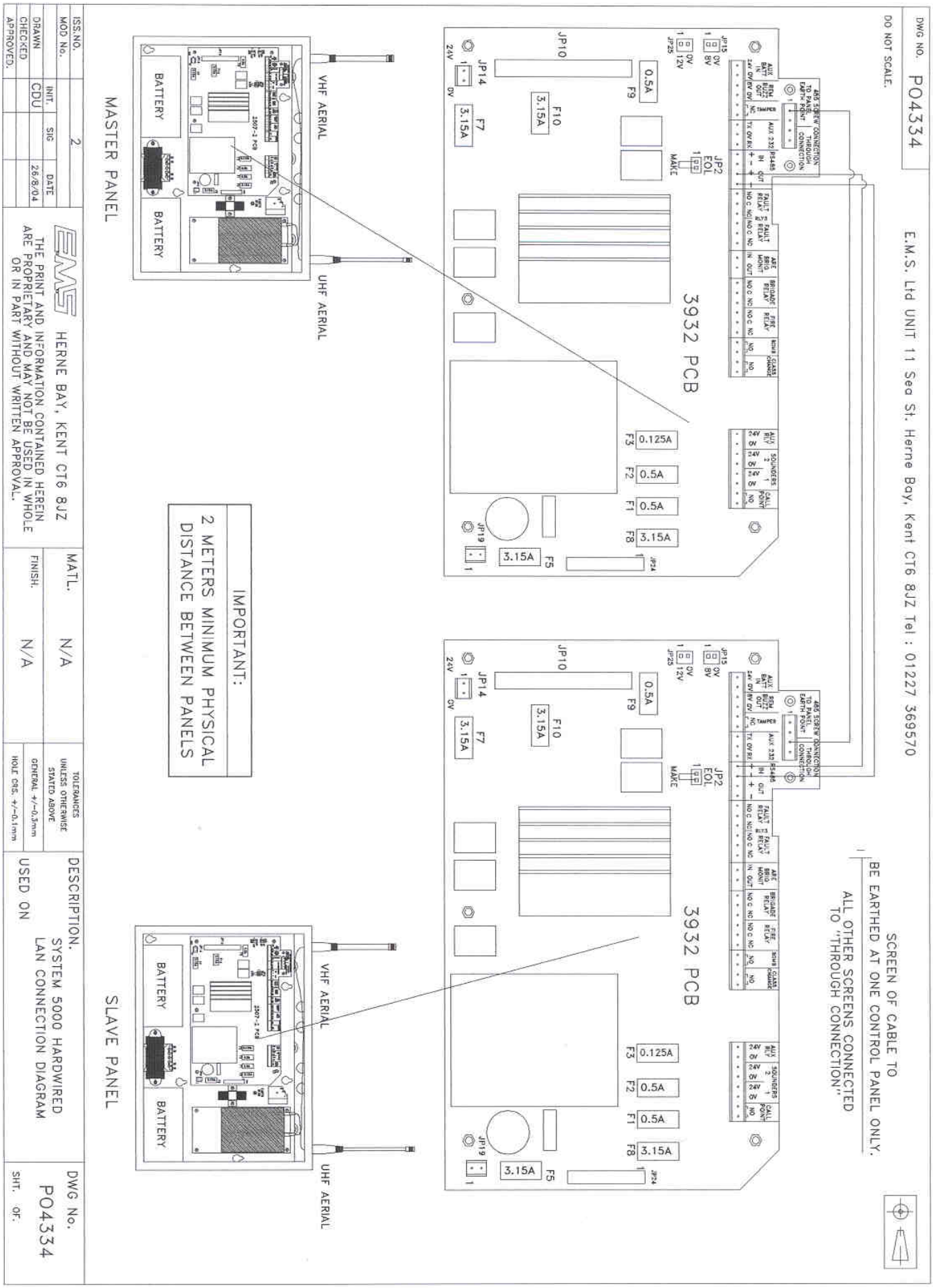
Ensure that the 240V AC mains supply is fused and unswitched.

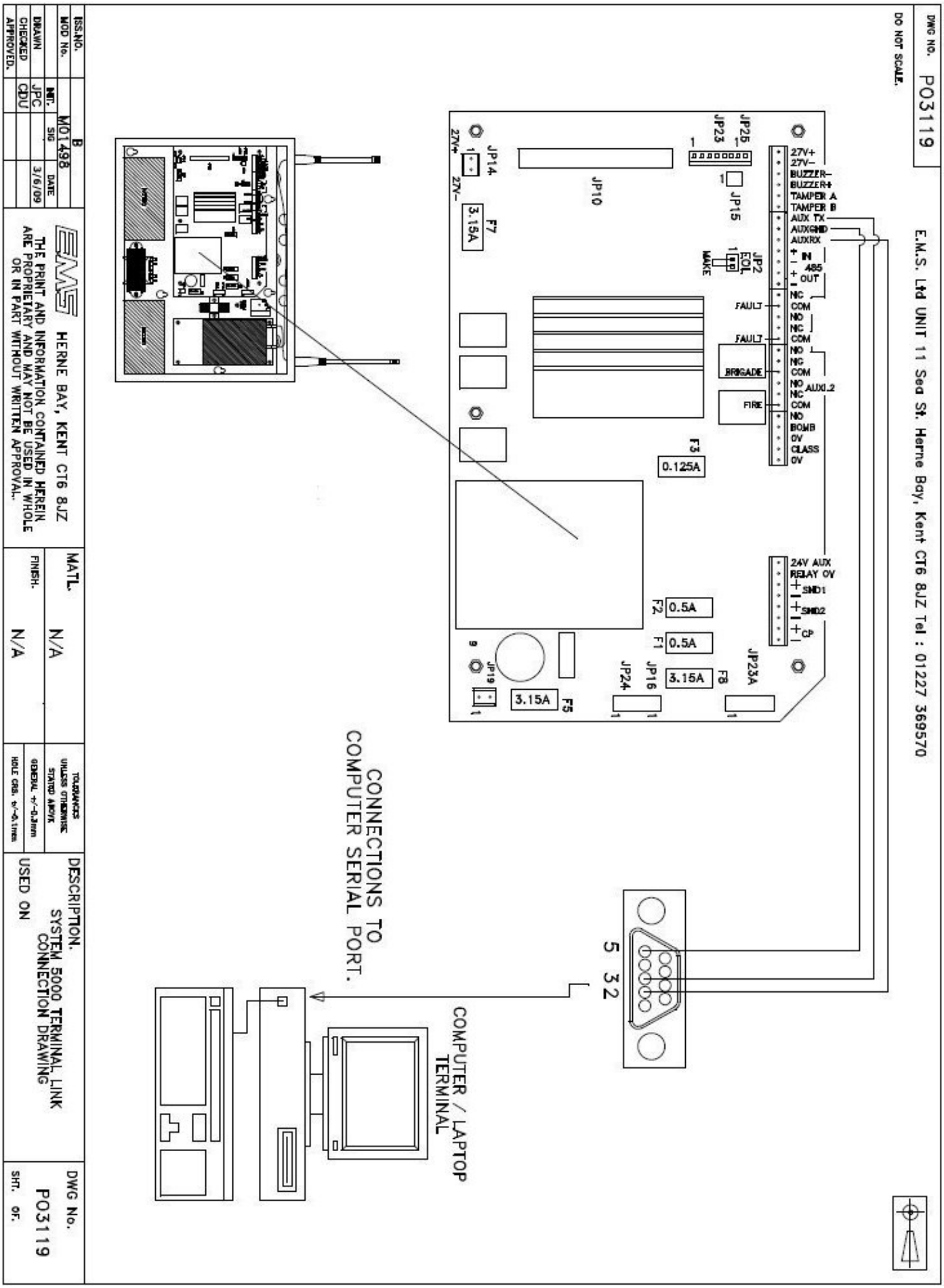

F10 = 3.15A PRINTER FUSE
F9 = 0.5A REMOTE RECEIVER FUSE
F8 = 3.15A AUXILIARY 24V INPUT FUSE
F7 = 3.15A BATTERY FUSE
F5 = 3.15A A.C. INPUT FUSE
F3 = 0.125A 24V MONITOR FUSE
F2 = 0.5A HARDWIRED SOUNDER 1 FUSE
F1 = 0.5A HARDWIRED SOUNDER 2 FUSE
2507-2 PCB
2507-2 PCB
E.M.S. Ltd UNIT 11 Sea St. Herne Bay, Kent CT6 8JZ Tel : 01227 369570
HERNE BAY, KENT CT6 8JZ
THE PRINT AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY AND MAY NOT BE USED IN WHOLE OR IN PART WITHOUT WRITTEN APPROVAL.
DESCRIPTION. SYSTEM 5000 FUSE VALUE AND DESCRIPTIONS
USED ON
DWG No. PO2911
DWG NO. PO2911
DO NOT SCALE.
MATL. N/A
FINISH. N/A
TOLERANCES UNLESS OTHERWISE STATED ABOVE
GENERAL +/-0.3mm
HOLE CRS. +/-0.1mm
ISS.NO. 1
MOD No. M01589
DRAWN CDU 11/12/98
CHECKED
APPROVED.
INIT. SIG DATE

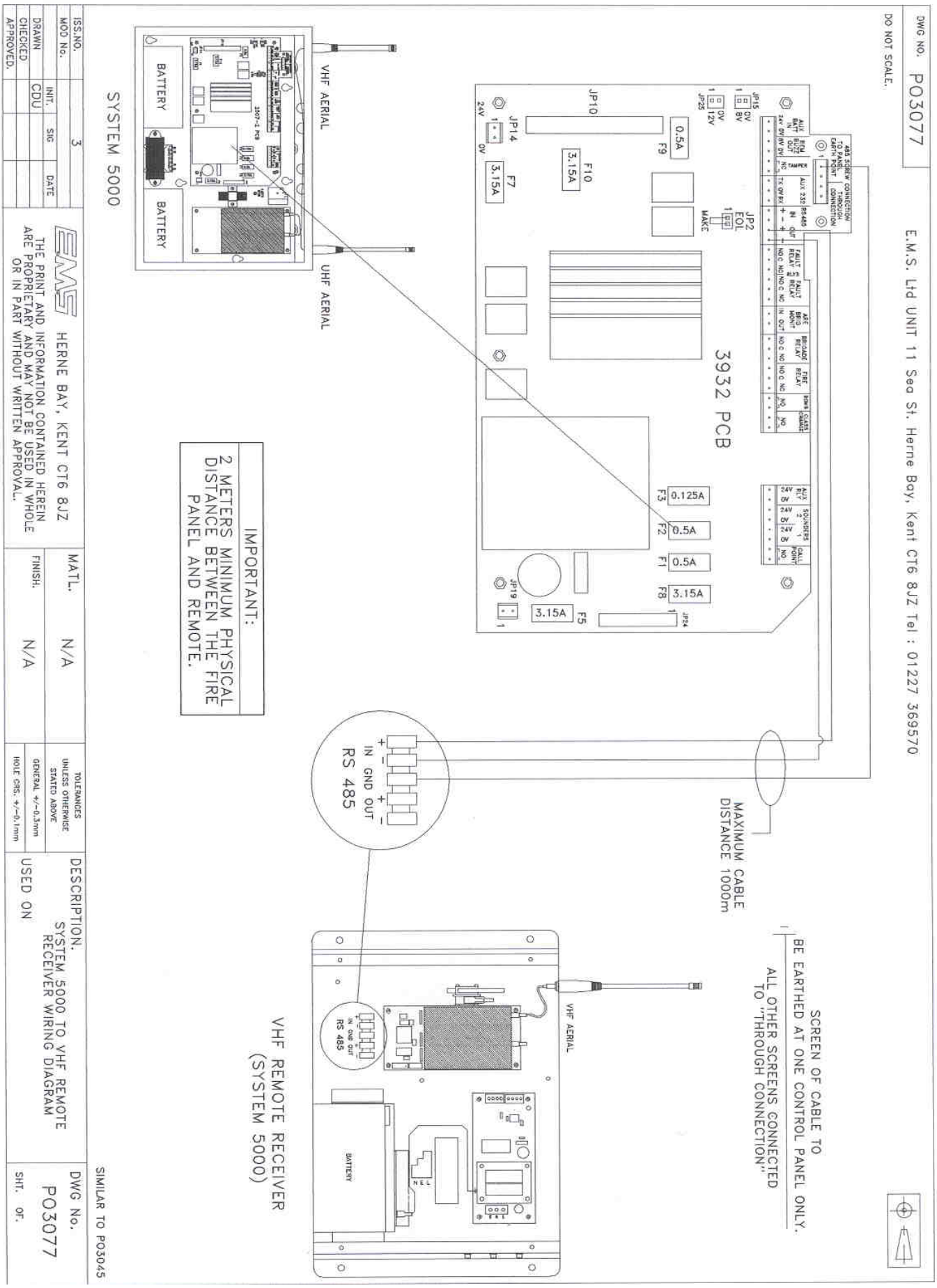

DWG NO. PO2910
DO NOT SCALE.
E.M.S. Ltd UNIT 11 Sea St. Herne Bay, Kent CT6 8JZ Tel : 01227 369570
ISS. NO. 2
MOD No.
DRAWN CDU INIT. SIG DATE 27-8-04
CHECKED
APPROVED.
HERNE BAY, KENT CT6 8JZ
THE PRINT AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY AND MAY NOT BE USED IN WHOLE OR IN PART WITHOUT WRITTEN APPROVAL.
MATL. N/A
FINISH. N/A
TOLERANCES UNLESS OTHERWISE STATED ABOVE
GENERAL +/-0.3mm
HOLE CRS. +/-0.1mm
DESCRIPTION.
HARDWIRE INPUT AND OUTPUT CONNECTIONS TO THE SYSTEM 5000
USED ON
DWG No. PO2910
SHT. OF.
H/W DEVICES
PANEL DEVICE NUMBER ALLOCATION
CALL POINT 1
SOUNDER 1 2
SOUNDER 2 3
24V MONITOR 4
RESISTOR COLOUR CODES
Y V R
4K7
R R R
2K2
BATTERY
BATTERY
3932 PCB
3932 PCB
JP19
3.15A
S1
JP24
F8 3.15A
F3 0.5A
F2 0.5A
F1 0.125A
JP14
F7 3.15A
F10 5.15A
JP10
F9 0.5A
JP25
JP15
JP2
MAKE
EOL
485 SCREW CONNECTION
TBSDOSH
CONNECTION
TO PANEL
EARTH POINT
AUX 24V
BELL RLY
SONNDERS
24V
0V
AUX RLY
CLASS CHANGE
MSWB
FIRE RELAY
BRIGADE RELAY
ABS BRS MONIT
FAULT RELAY
OUT
IN
RS485
AUX 232
TX 0V RX
BELL
BUZZ OUT
AUX BATT IN
N/O CONTACT
N/O CONTACT
N/O CONTACT
4K7
4K7
4K7
2K2

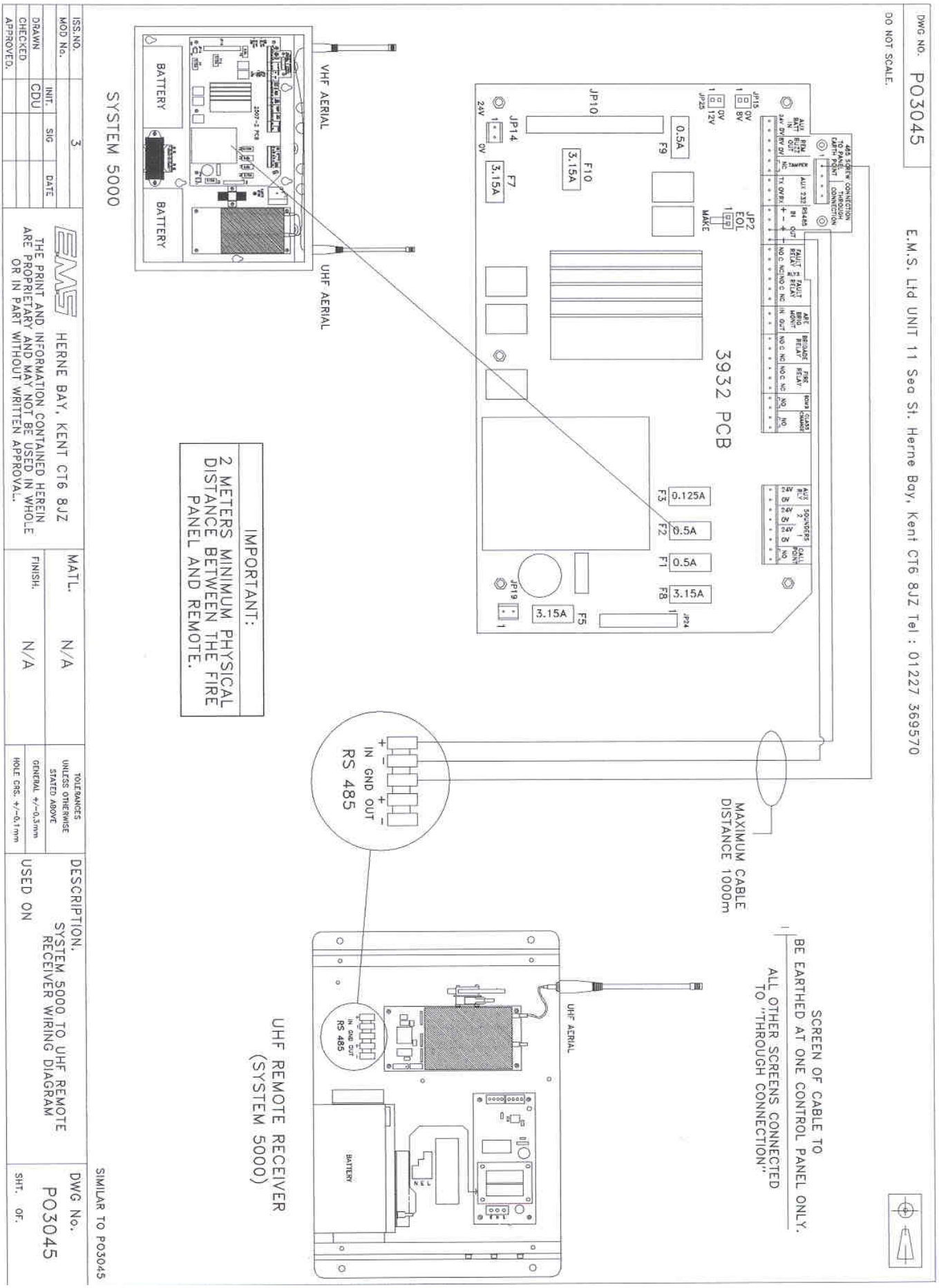

DWG NO. P02989
E.M.S. Ltd UNIT 11 Sea St. Herne Bay, Kent CT6 8JZ Tel : 01227 369570
DO NOT SCALE.
ASSEMBLY INSTRUCTIONS AERIAL ANTI-TAMPER CONE.
'CONE' P03117
(SEE OPPOSITE FOR VARIATIONS).
EXAMPLE
RFS-5520/AV
VHF
RFS-5521/AU
UHF
BATTERY
BATTERY
ALL ANTI-TAMPER 'CONES' SHOULD BE HELD IN PLACE BY M3 KNURLED THUMBSCREWS (PT No FASM3X0.5KNTHUMBNUTS) 2 OFF PER 'CONE
P03117
FASM3X0.5KNTHUMBNUTS
AERIAL TYPES :
RFS-5520/AV VHF
RFS-5521/AU UHF
P03117/1
FASM3X0.5KNTHUMBNUTS
AERIAL TYPES :
RG213U
LOW LOSS CABLE
ASSEMBLIES
GRO19.00DBLKNYLON
(HEYCO GROMMET)
402-2089
CUT GROMMET TO ENABLE SIDE ENTRY AND ENCIRCLEMENT OF PRE-ASSEMBLED HARNESS
P03117/1
FASM3X0.5KNTHUMBNUTS
AERIAL TYPES :
HI-GAIN AERIALS
USING RG58
CABLE ASSEMBLIES
ISS.NO. C
MOD No. --- INIT. SIG DATE
DRAWN CDU 27-11-97
CHECKED JPC
APPROVED.
HERNE BAY, KENT CT6 8JZ
THE PRINT AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY AND MAY NOT BE USED IN WHOLE OR IN PART WITHOUT WRITTEN APPROVAL.
MATL. N/A
FINISH. N/A
TOLERANCES UNLESS OTHERWISE STATED ABOVE
GENERAL +/-0.3mm
HOLE CRS. +/-0.1mm
DESCRIPTION.
AERIAL TAMPERPROOF
BRACKET ASSEMBLY INSTRUCTIONS
USED ON SYSTEM 5000 FIRE PANEL
DWG No. P02989
SHT. OF.

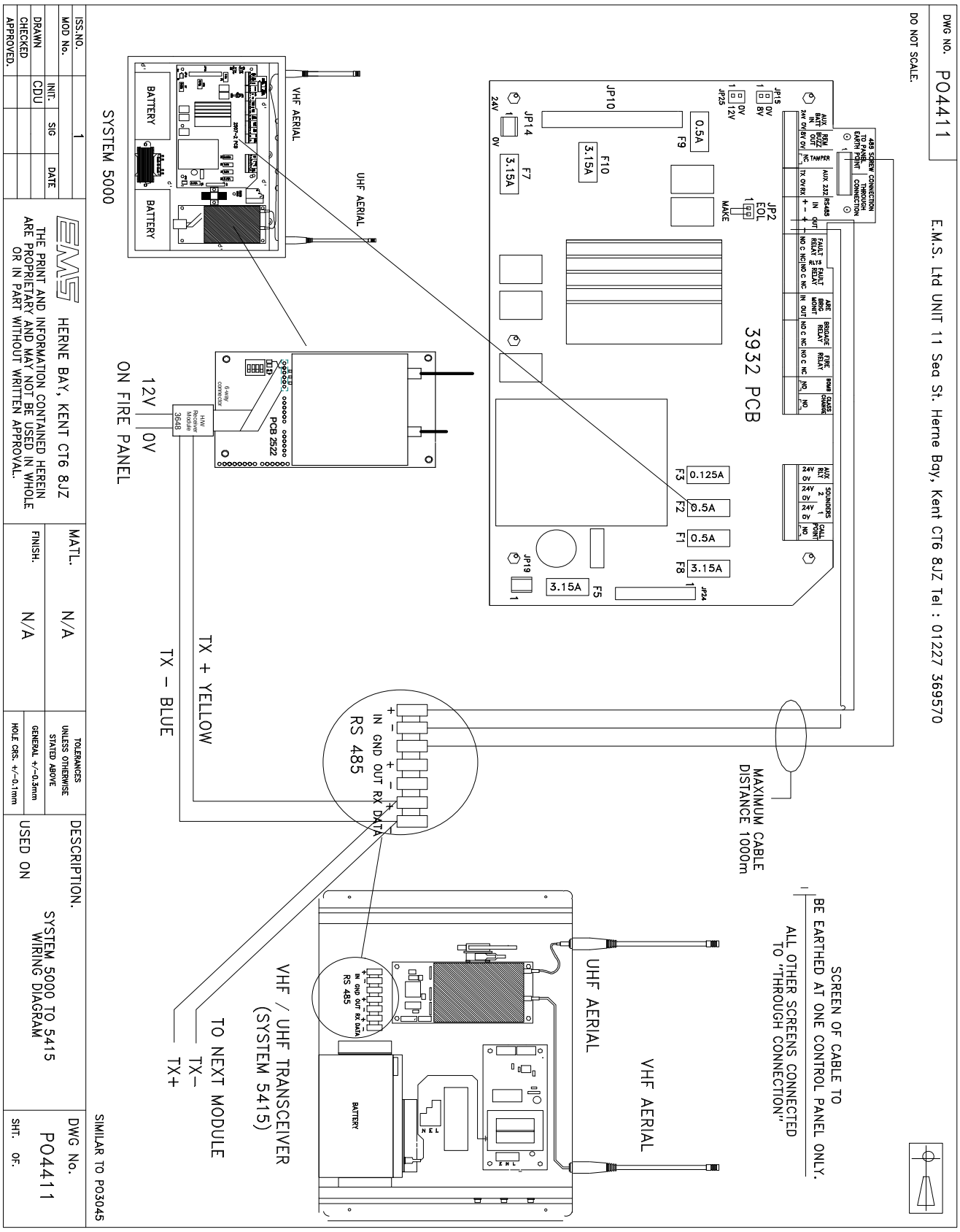

FRONT VIEW WITH COVER REMOVED
REMOVE LINK WHEN INSTALLED
MONITORED INPUT
RFS-5600/I
PO3353-B
FRONT VIEW
LED
N/C INPUT CONNECTION
Iss No.
Change Note No.
Drawn By
Checked By
Approved By
Initial
CDU
Sig.
Date
29/10/09
Herne Bay, Kent CT6 8JZ
Tel : 01227-369570
THE PRINT AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY AND MAY NOT BE USED IN WHOLE OR IN PART WITHOUT WRITTEN APPROVAL
Material :
AS ABOVE
Finish :
CLEAN
5600/I ONLY
Gen Tol +/- 0.3mm
Hole Grs +/- 0.1mm
Description
INPUT UNIT WIRING
Dwg No.
PO3112

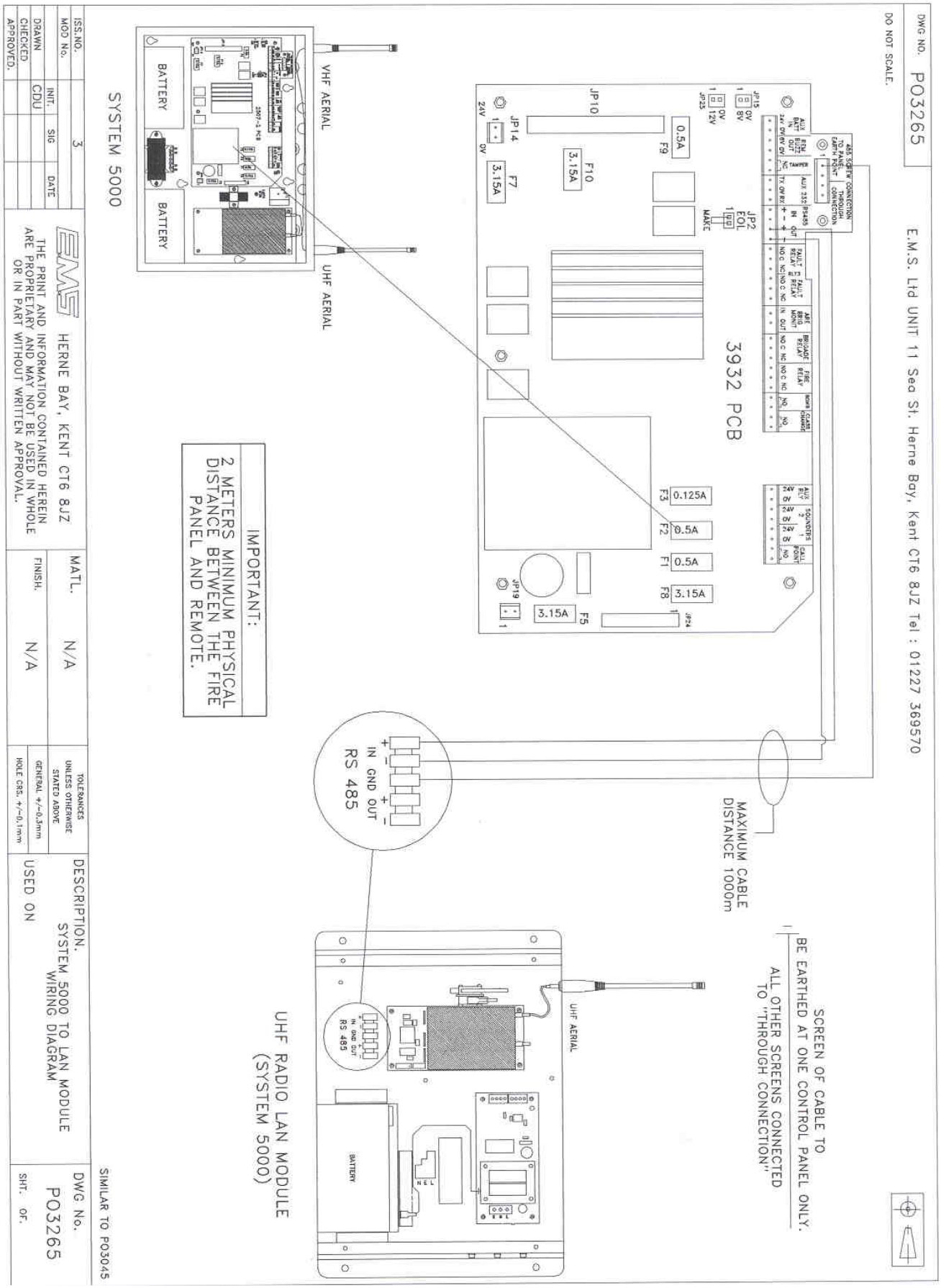

DWG NO. PO4334
DO NOT SCALE.
E.M.S. Ltd UNIT 11 Sea St. Herne Bay, Kent CT6 8JZ Tel : 01227 369570
SCREEN OF CABLE TO BE EARTHED AT ONE CONTROL PANEL ONLY.
ALL OTHER SCREENS CONNECTED TO "THROUGH CONNECTION".
3932 PCB
JP10
JP14
JP15
JP2
JP19
JP24
JP25
F1 0.5A
F2 0.5A
F3 0.125A
F5 3.15A
F7 3.15A
F8 3.15A
F9 0.5A
F10 3.15A
BATTERY
BATTERY
VHF AERIAL
UHF AERIAL
MASTER PANEL
SLAVE PANEL
IMPORTANT:
2 METERS MINIMUM PHYSICAL DISTANCE BETWEEN PANELS
ISS.NO. 2
MOD No.
DRAWN CDU 26/8/04
CHECKED
APPROVED.
THE PRINT AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY AND MAY NOT BE USED IN WHOLE OR IN PART WITHOUT WRITTEN APPROVAL.
HERNE BAY, KENT CT6 8JZ
MATL. N/A
FINISH. N/A
TOLERANCES UNLESS OTHERWISE STATED ABOVE
GENERAL +/-0.3mm
HOLE DIAS. +/-0.1mm
DESCRIPTION.
SYSTEM 5000 HARDWIRED LAN CONNECTION DIAGRAM
USED ON
DWG No. PO4334
SHT. OF.

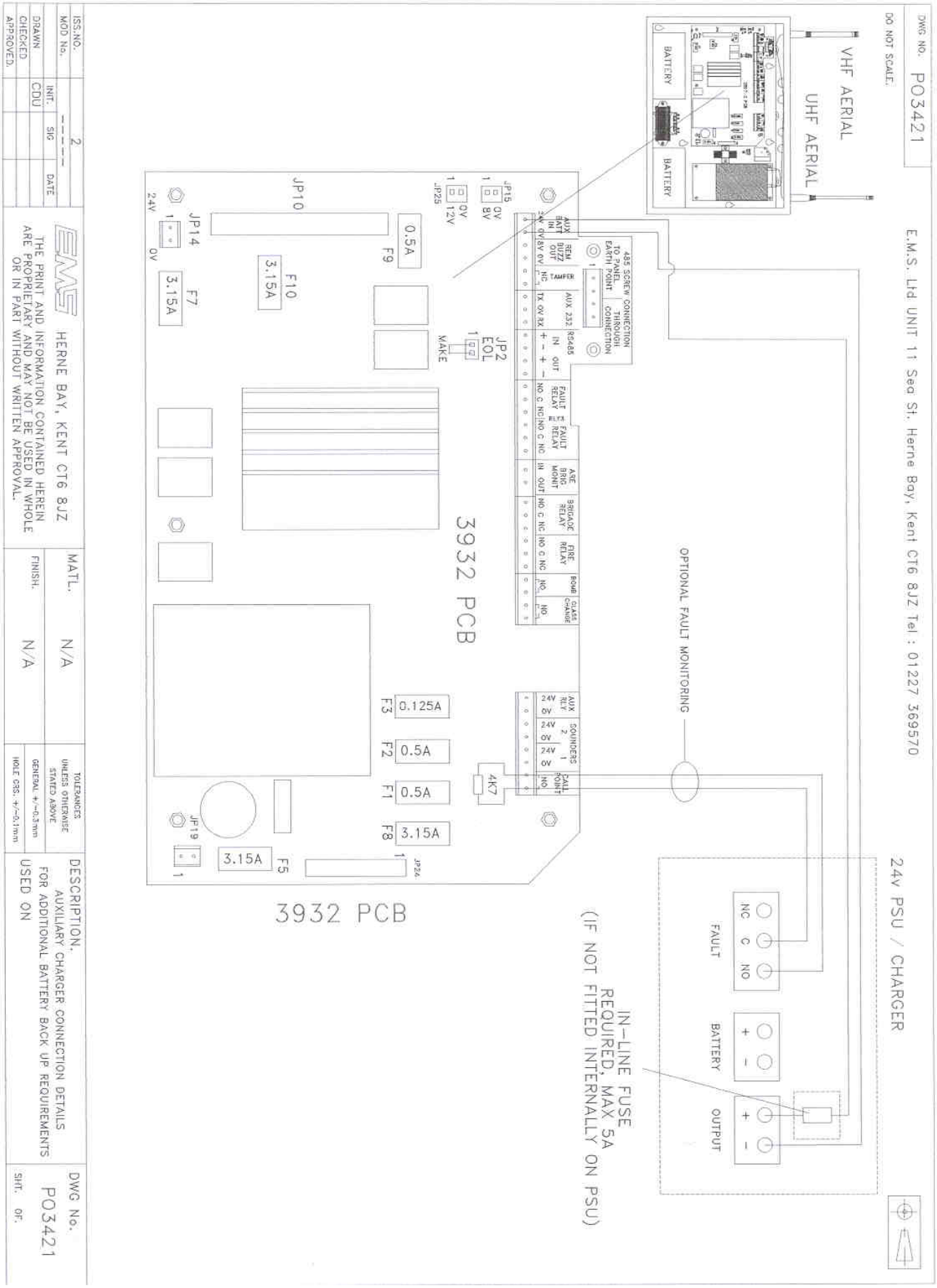

DWG NO. PO3119
DO NOT SCALE.
E.M.S. Ltd UNIT 11 Sea St. Herne Bay, Kent CT6 8JZ Tel : 01227 369570
27V+
27V-
BUZZER-
BUZZER+
TAMPER A
TAMPER B
AUX TX
AUXGND
AUXRX
+ IN
- IN
+ 485
- 485
OUT
NC
COM
NO
FAULT
BRIGADE
FIRE
BOMB
0V
CLASS
24V AUX
RELAY 0V
SND1
SND2
CP
JP10
JP14
JP15
JP16
JP19
JP23
JP23A
JP24
JP25
JP2
EOL
MAKE
F1 0.5A
F2 0.5A
F3 0.125A
F5 3.15A
F7 3.15A
F8 3.15A
CONNECTIONS TO COMPUTER SERIAL PORT.
5 32
COMPUTER / LAPTOP TERMINAL
ISS.NO. B
MOD No. M01498
DRAWN JPC 3/6/09
CHECKED CDU
APPROVED.
HERNE BAY, KENT CT6 8JZ
THE PRINT AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY AND MAY NOT BE USED IN WHOLE OR IN PART WITHOUT WRITTEN APPROVAL.
MATL. N/A
FINISH. N/A
TOLERANCES UNLESS OTHERWISE STATED ABOVE
GENERAL +/-0.3mm
HOLE DIAS. +/-0.1mm
DESCRIPTION. SYSTEM 5000 TERMINAL LINK CONNECTION DRAWING
USED ON
DWG No. PO3119
SHT. of.

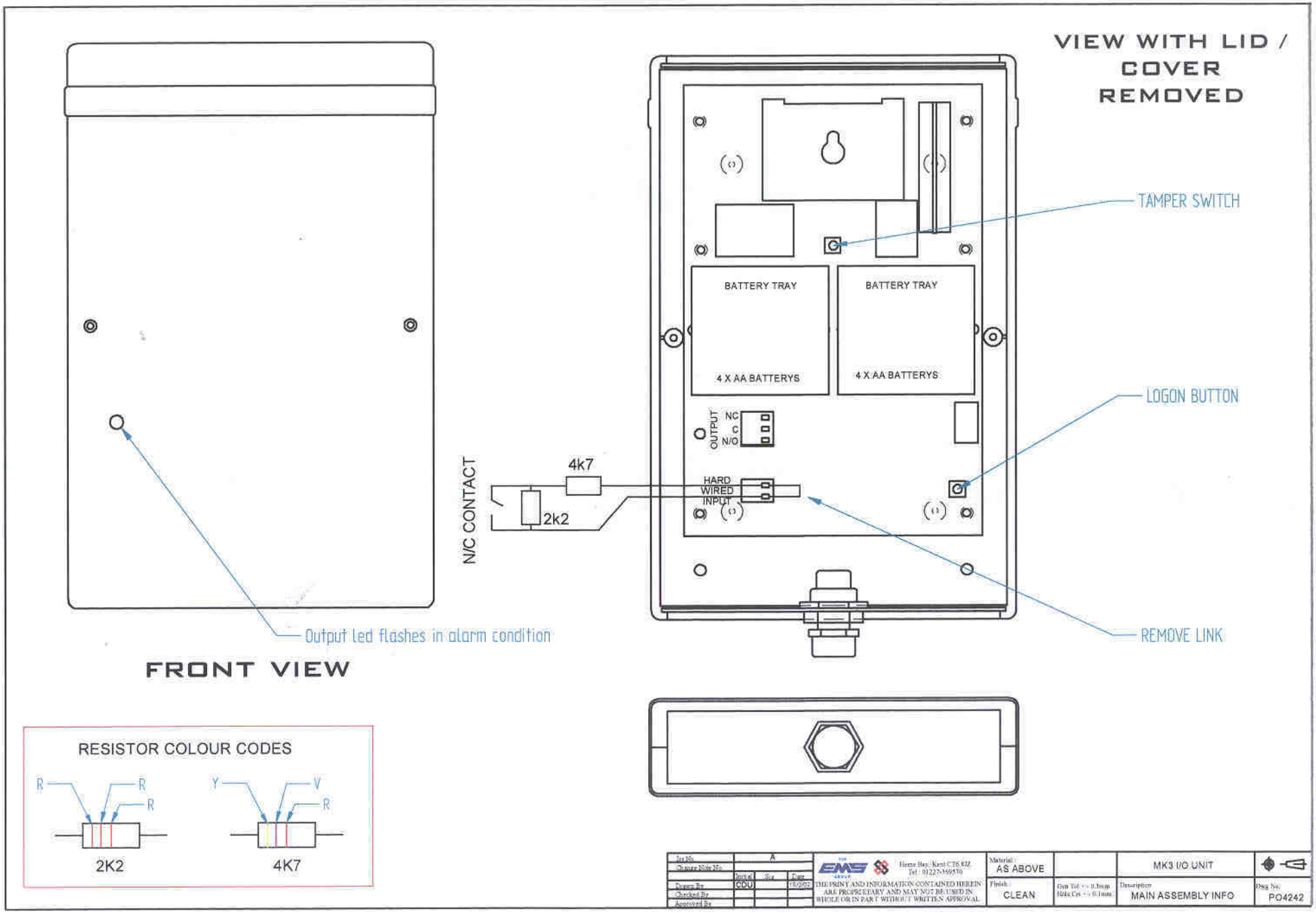

DWG NO. PO3077
DO NOT SCALE.
E.M.S. Ltd UNIT 11 Sea St. Herne Bay, Kent CT6 8JZ Tel : 01227 369570
SYSTEM 5000
BATTERY
BATTERY
VHF AERIAL
UHF AERIAL
3932 PCB
JP10
JP14
JP15
JP25
JP2
EOL
MAKE
F9 0.5A
F10 3.15A
F7 3.15A
F3 0.125A
F2 0.5A
F1 0.5A
F8 3.15A
F5 3.15A
JP19
JP24
IMPORTANT:
2 METERS MINIMUM PHYSICAL DISTANCE BETWEEN THE FIRE PANEL AND REMOTE.
RS 485
IN GND OUT
MAXIMUM CABLE DISTANCE 1000m
SCREEN OF CABLE TO BE EARTHED AT ONE CONTROL PANEL ONLY.
ALL OTHER SCREENS CONNECTED TO "THROUGH CONNECTION"
VHF REMOTE RECEIVER (SYSTEM 5000)
VHF AERIAL
BATTERY
ISS.NO. 3
MOD No.
DRAWN CDU
CHECKED
APPROVED.
INIT. SIG DATE
HERNE BAY, KENT CT6 8JZ
THE PRINT AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY AND MAY NOT BE USED IN WHOLE OR IN PART WITHOUT WRITTEN APPROVAL.
MATL. N/A
FINISH. N/A
TOLERANCES UNLESS OTHERWISE STATED ABOVE
GENERAL +/-0.25mm
HOLE CRS. +/-0.1mm
DESCRIPTION. SYSTEM 5000 TO VHF REMOTE RECEIVER WIRING DIAGRAM
USED ON
DWG No. PO3077
SHT. OF.
SIMILAR TO PO3045


DWG NO. P03045
E.M.S. Ltd UNIT 11 Sea St. Herne Bay, Kent CT6 8JZ Tel : 01227 369570
DO NOT SCALE.
SYSTEM 5000
BATTERY
BATTERY
VHF AERIAL
UHF AERIAL
3932 PCB
JP10
JP14
JP15
JP25
JP2
EOL
MAKE
F9 0.5A
F10 3.15A
F7 3.15A
F3 0.125A
F2 0.5A
F1 0.5A
F8 3.15A
F5 3.15A
JP19
JP24
IMPORTANT:
2 METERS MINIMUM PHYSICAL DISTANCE BETWEEN THE FIRE PANEL AND REMOTE.
IN GND OUT
RS 485
MAXIMUM CABLE DISTANCE 1000m
SCREEN OF CABLE TO BE EARTHED AT ONE CONTROL PANEL ONLY.
ALL OTHER SCREENS CONNECTED TO "THROUGH CONNECTION"
UHF REMOTE RECEIVER (SYSTEM 5000)
UHF AERIAL
BATTERY
ISS.NO. 3
MOD No.
DRAWN CDU
CHECKED
APPROVED.
INIT. SIG DATE
HERNE BAY, KENT CT6 8JZ
THE PRINT AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY AND MAY NOT BE USED IN WHOLE OR IN PART WITHOUT WRITTEN APPROVAL.
MATL. N/A
FINISH. N/A
TOLERANCES UNLESS OTHERWISE STATED ABOVE
GENERAL +/-0.3mm
HOLE DRS. +/-0.1mm
DESCRIPTION.
SYSTEM 5000 TO UHF REMOTE RECEIVER WIRING DIAGRAM
USED ON
DWG No. P03045
SHT. OF.
SIMILAR TO P03045

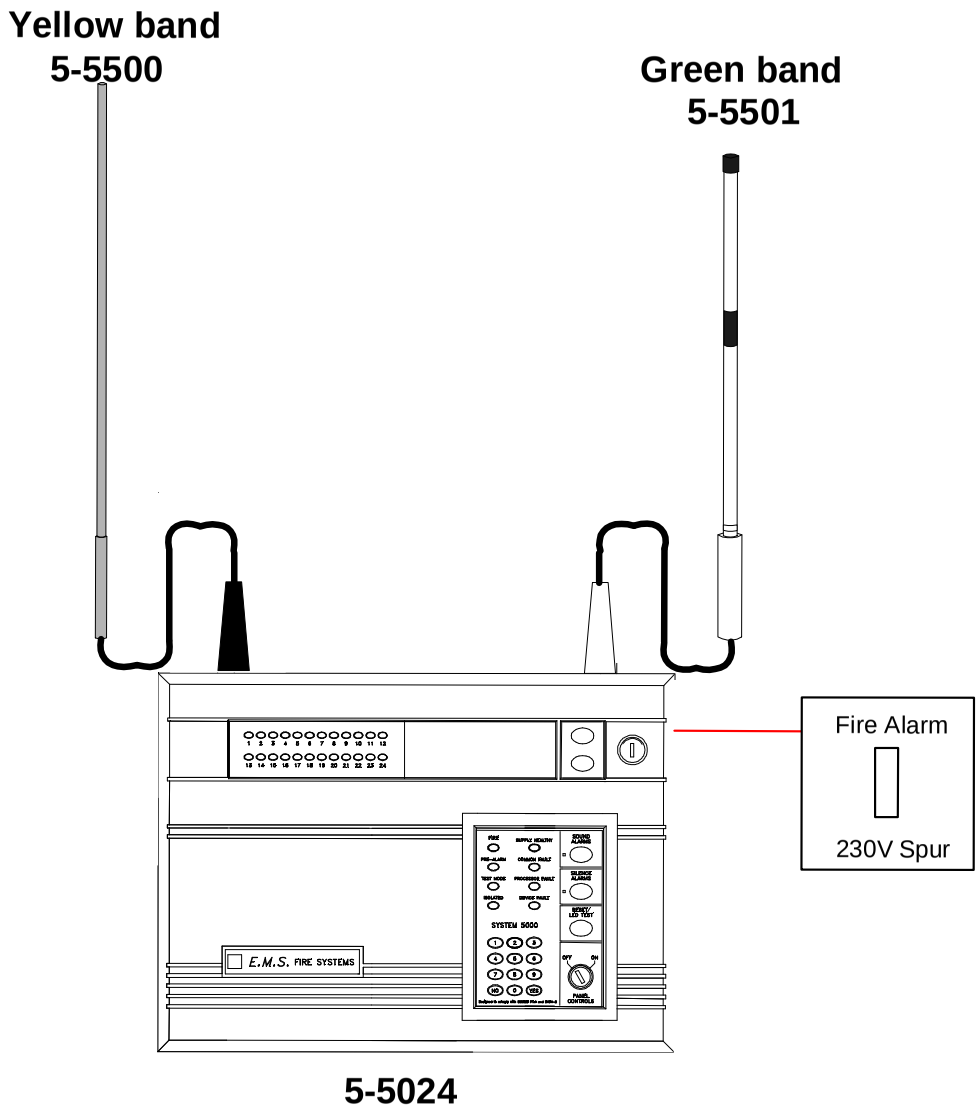

DWG NO. PO4411
DO NOT SCALE.
E.M.S. Ltd UNIT 11 Seq St. Herne Bay, Kent CT6 8JZ Tel : 01227 369570
3932 PCB
F9 0.5A
F10 3.15A
F7 3.15A
F3 0.125A
F2 0.5A
F1 0.5A
F8 3.15A
F5 3.15A
JP10
JP15
JP14
JP2 EOL MAKE
JP25
JP19
JP24
VHF AERIAL
UHF AERIAL
BATTERY
PCB 2522
MAXIMUM CABLE DISTANCE 1000m
SCREEN OF CABLE TO BE EARTHED AT ONE CONTROL PANEL ONLY.
ALL OTHER SCREENS CONNECTED TO "THROUGH CONNECTION"
RS 485
IN GND OUT RX DATA
TX + YELLOW
TX – BLUE
12V
0V
ON FIRE PANEL
SYSTEM 5000
VHF / UHF TRANSCEIVER (SYSTEM 5415)
TO NEXT MODULE
TX–
TX+
THE PRINT AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY AND MAY NOT BE USED IN WHOLE OR IN PART WITHOUT WRITTEN APPROVAL.
HERNE BAY, KENT CT6 8JZ
ISS.NO. 1
MOD No.
DRAWN CDU INIT.
CHECKED SIG
APPROVED. DATE
MATL. N/A
FINISH. N/A
TOLERANCES UNLESS OTHERWISE STATED ABOVE
GENERAL +/-0.3mm
HOLE CRS. +/-0.1mm
DESCRIPTION.
SYSTEM 5000 TO 5415 WIRING DIAGRAM
USED ON
DWG No. PO4411
SHT. OF.
SIMILAR TO PO3045


DWG NO. PO3265
DO NOT SCALE.
E.M.S. Ltd UNIT 11 Sea St. Herne Bay, Kent CT6 8JZ Tel : 01227 369570
SYSTEM 5000
VHF AERIAL
UHF AERIAL
BATTERY
BATTERY
3932 PCB
JP10
JP14
JP15
JP2
JP25
JP19
JP24
F9 0.5A
F10 3.15A
F7 3.15A
F3 0.125A
F2 0.5A
F1 0.5A
F8 3.15A
F5 3.15A
IMPORTANT:
2 METERS MINIMUM PHYSICAL DISTANCE BETWEEN THE FIRE PANEL AND REMOTE.
RS 485
IN GND OUT
MAXIMUM CABLE DISTANCE 1000m
SCREEN OF CABLE TO BE EARTHED AT ONE CONTROL PANEL ONLY.
ALL OTHER SCREENS CONNECTED TO "THROUGH CONNECTION"
UHF RADIO LAN MODULE (SYSTEM 5000)
UHF AERIAL
BATTERY
ISS.NO. 3
MOD No.
DRAWN CDU INIT.
CHECKED SIG
APPROVED. DATE
HERNE BAY, KENT CT6 8JZ
THE PRINT AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY AND MAY NOT BE USED IN WHOLE OR IN PART WITHOUT WRITTEN APPROVAL.
MATL. N/A
FINISH. N/A
TOLERANCES UNLESS OTHERWISE STATED ABOVE
GENERAL +/-0.5mm
HOLE CRS. +/-0.1mm
DESCRIPTION. SYSTEM 5000 TO LAN MODULE WIRING DIAGRAM
USED ON
SIMILAR TO PO3045
DWG No. PO3265
SHT. OF.

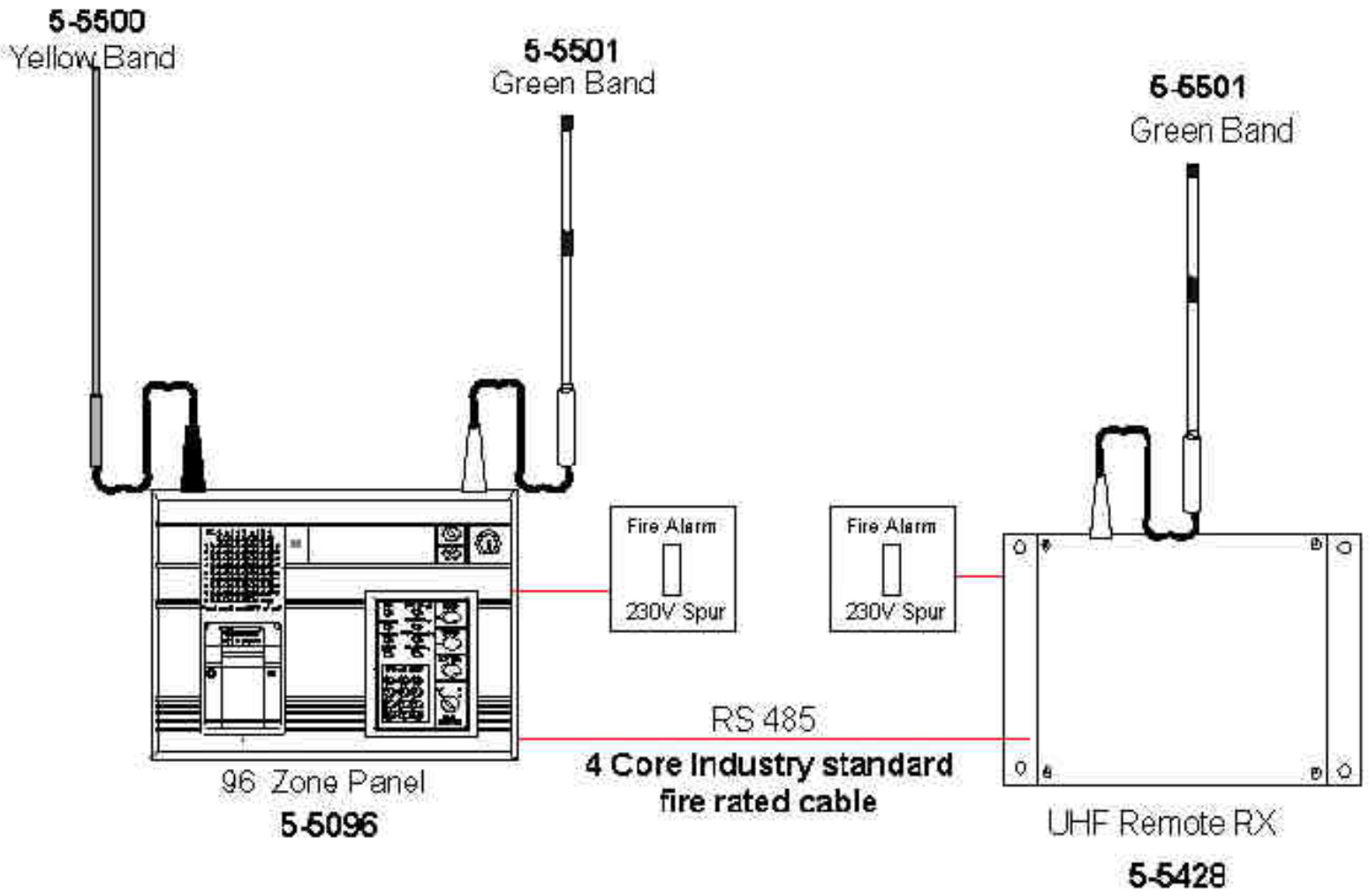

DWG NO. PO3421
DO NOT SCALE.
E.M.S. Ltd UNIT 11 Sea St. Herne Bay, Kent CT6 8JZ Tel : 01227 369570
VHF AERIAL
UHF AERIAL
BATTERY
BATTERY
OPTIONAL FAULT MONITORING
24v PSU / CHARGER
FAULT
BATTERY
OUTPUT
NC C NO
IN-LINE FUSE REQUIRED, MAX 5A (IF NOT FITTED INTERNALLY ON PSU)
3932 PCB
JP10
JP14
JP15
JP25
JP2 EOL
MAKE
JP19
JP2A
F9 0.5A
F10 3.15A
F7 3.15A
F3 0.125A
F2 0.5A
F1 0.5A
F8 3.15A
F5 3.15A
4K7
485 SCREW CONNECTION TO PANEL EARTH POINT
THROUGH CONNECTION
AUX BATT IN
REM BUZZ OUT
TAMPER
AUX 232
RS485
FAULT RELAY
FAULT RELAY
ARC BRK MONIT
BRIGADE RELAY
FIRE RELAY
BOMB
GLASS CHANGE
AUX RLY
COUNTERS 2
COUNTERS 1
CALL POINT
ISS.NO. 2
MOD No. ------
DRAWN CDU
CHECKED
APPROVED
INT. SIG DATE
EMS HERNE BAY, KENT CT6 8JZ
THE PRINT AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY AND MAY NOT BE USED IN WHOLE OR IN PART WITHOUT WRITTEN APPROVAL.
MATL. N/A
FINISH. N/A
TOLERANCES UNLESS OTHERWISE STATED ABOVE
GENERAL +/-0.3mm
HOLE DIS. +/-0.1mm
DESCRIPTION.
AUXILIARY CHARGER CONNECTION DETAILS
FOR ADDITIONAL BATTERY BACK UP REQUIREMENTS
USED ON
DWG No. PO3421
SHT. OF.


VIEW WITH LID / COVER REMOVED
TAMPER SWITCH
BATTERY TRAY
BATTERY TRAY
4 X AA BATTERYS
4 X AA BATTERYS
LOGON BUTTON
OUTPUT
NC
C
N/O
4k7
HARD WIRED INPUT
N/C CONTACT
2k2
REMOVE LINK
Output led flashes in alarm condition
FRONT VIEW
RESISTOR COLOUR CODES
R
R
R
2K2
Y
V
R
4K7
MK3 I/O UNIT
AS ABOVE
CLEAN
MAIN ASSEMBLY INFO
PO4242

Typical Panel Layout

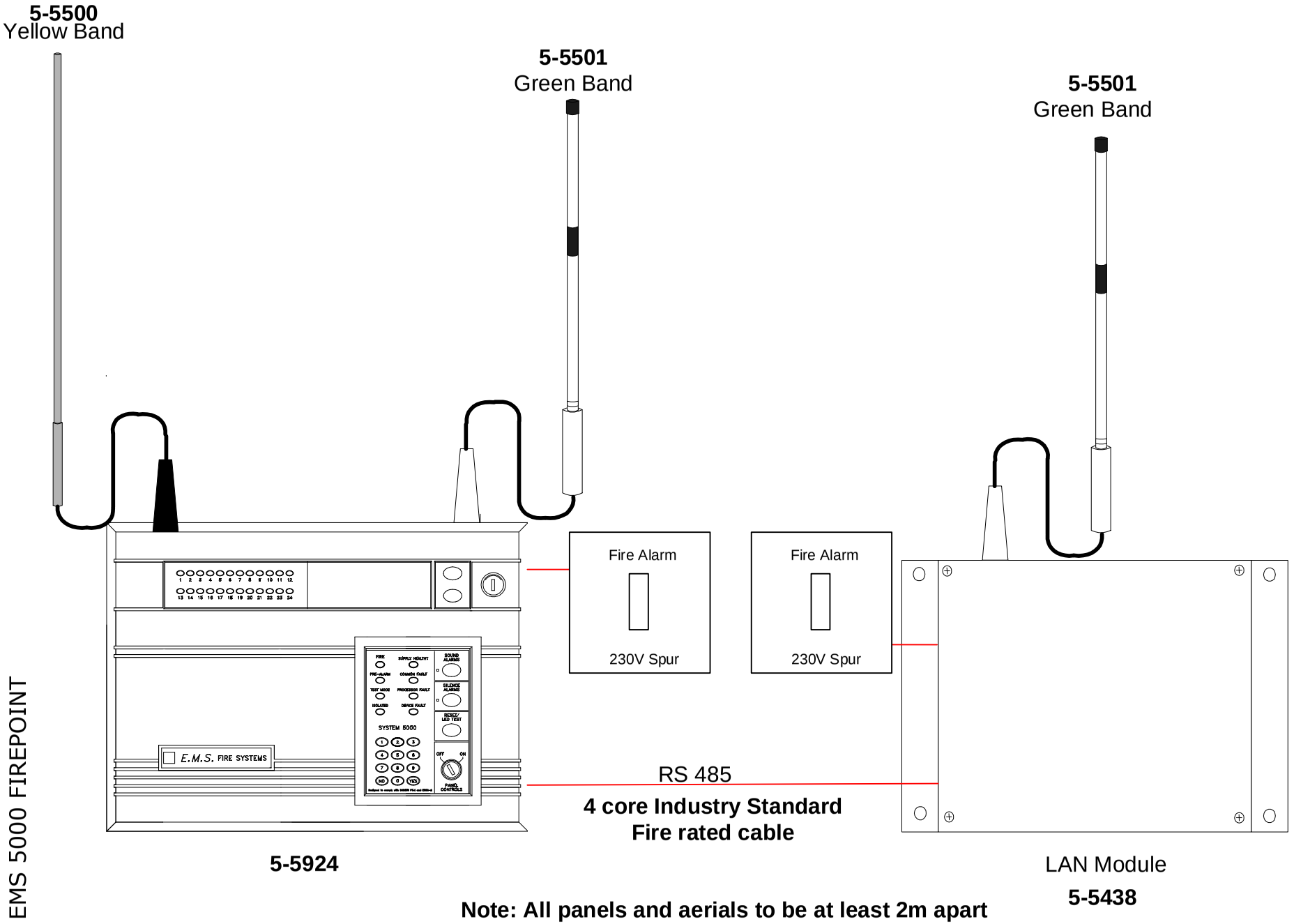


Typical Panel Layout Including UHF Remote Receiver



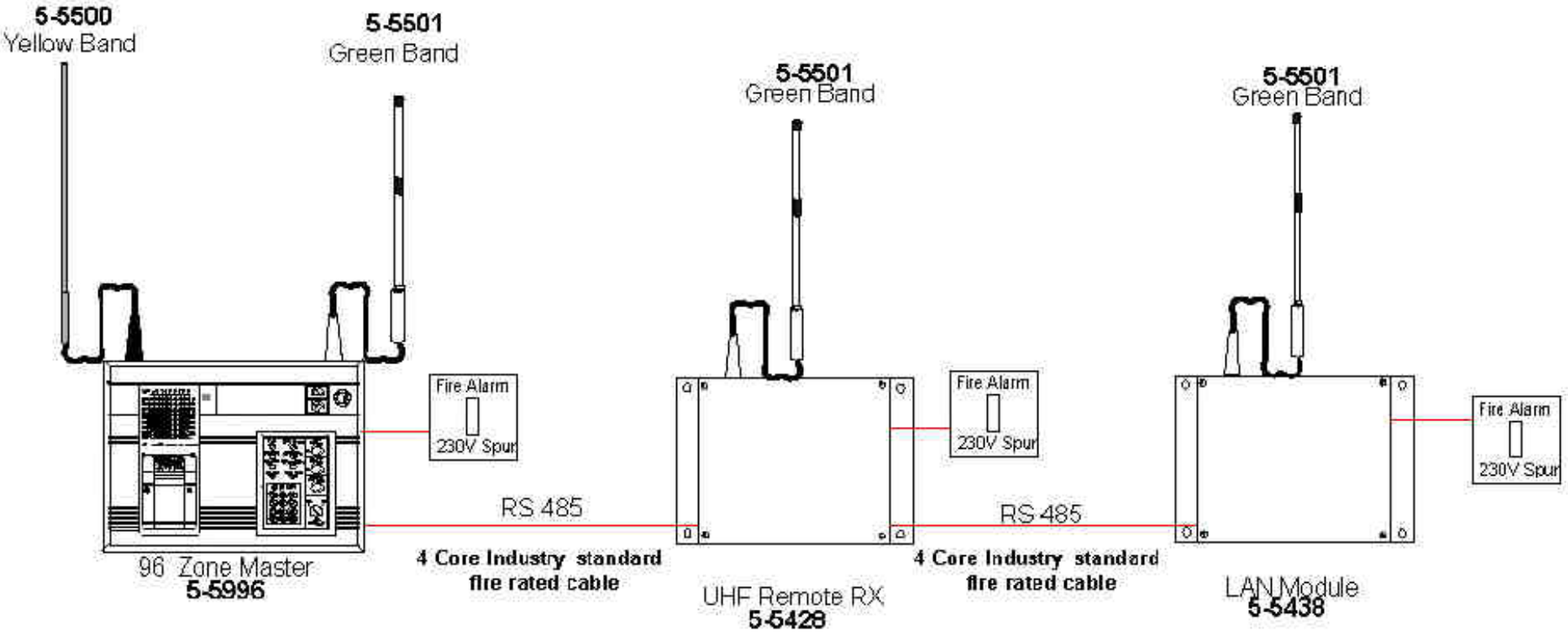
Note: All panels and aerials to be at least 2m apart
Maximum cable run for RS485 Bus 1Km

Typical LAN Panel Layout Including LAN Module



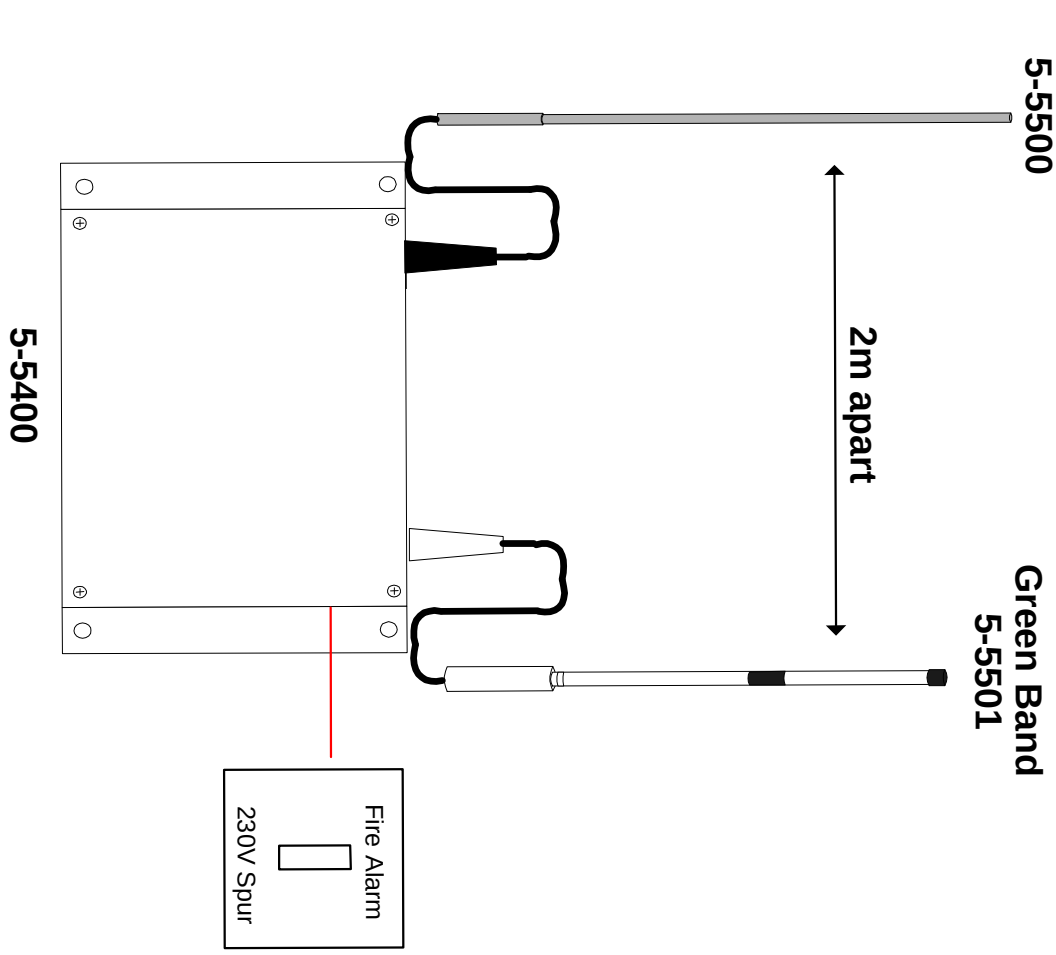
Note: All panels and aerials to be at least 2m apart
Maximum cable run for RS485 Bus 1 Km

Typical LAN Panel Layout Including LAN Module and UHF Remote Receiver



Note: All panels and aerials to be at least 2m apart
Maximum cable run for RS458 Bus 1 Km

Typical VHF Transponder Layout

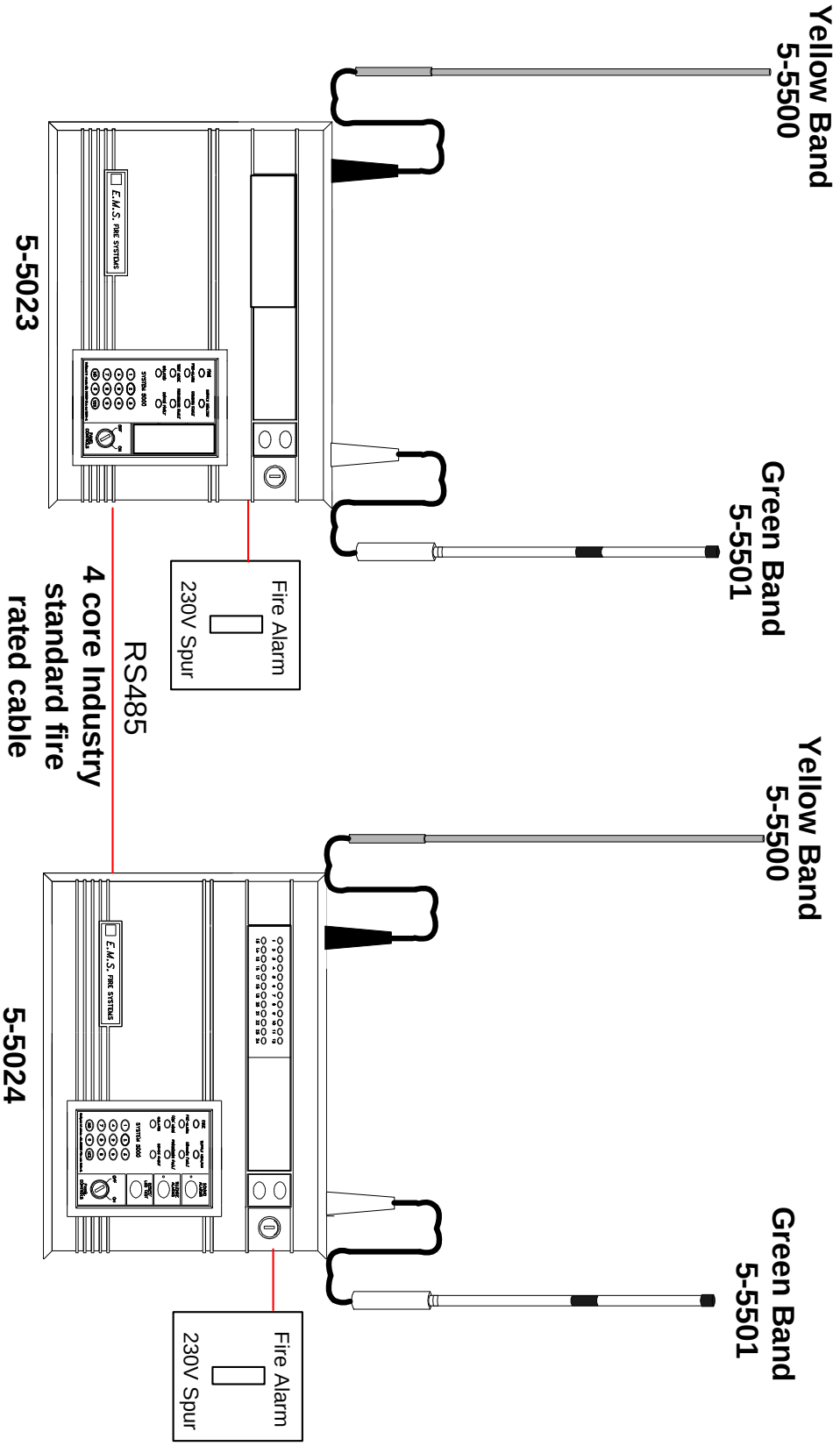


5

Typical UHF Transponder Layout

6

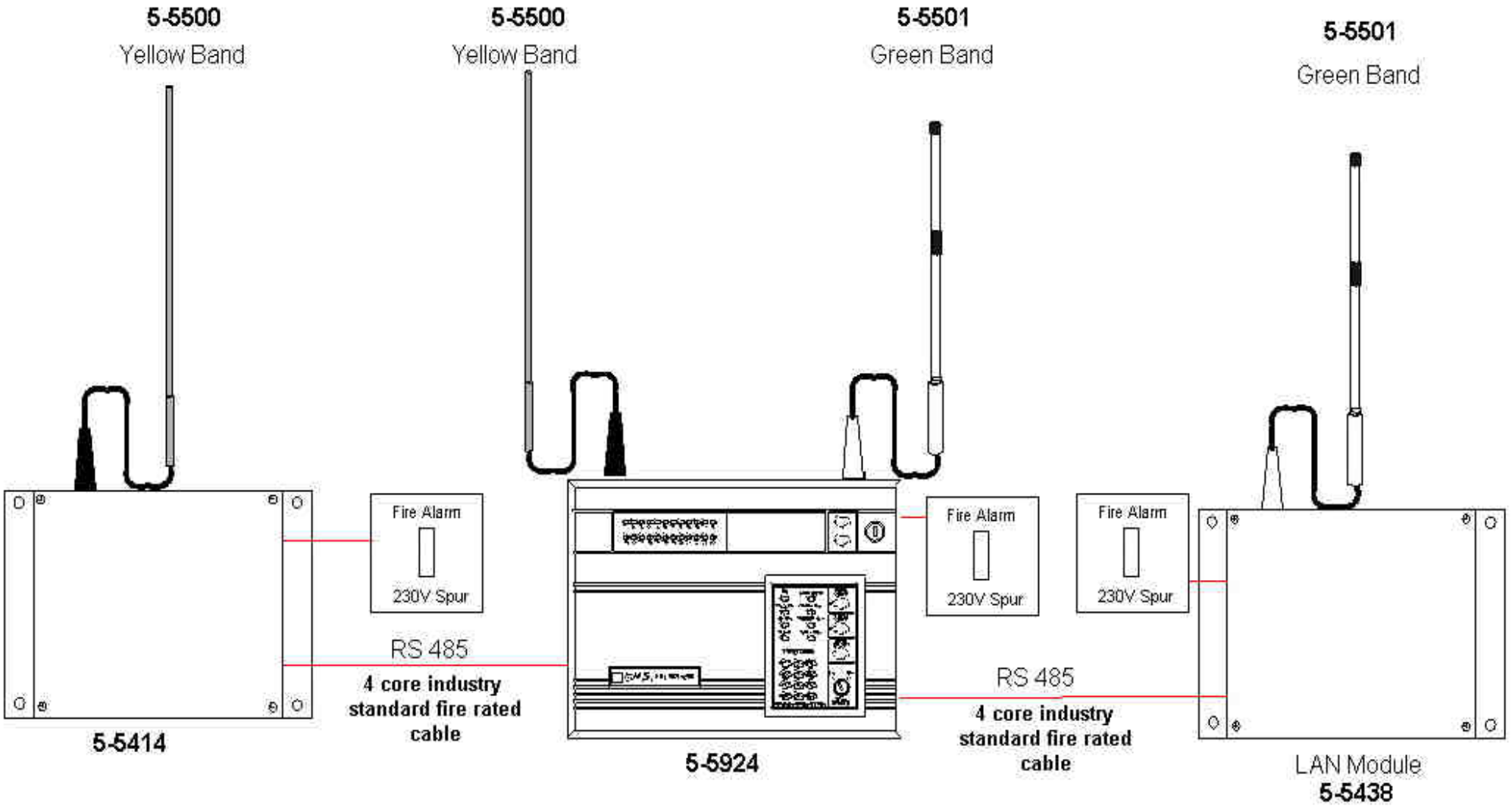
Typical Hardwired Panel Network Layout



Note: All panels and aerials to be at least 2m apart
Maximum cable run for RS485 Bus 1 Km

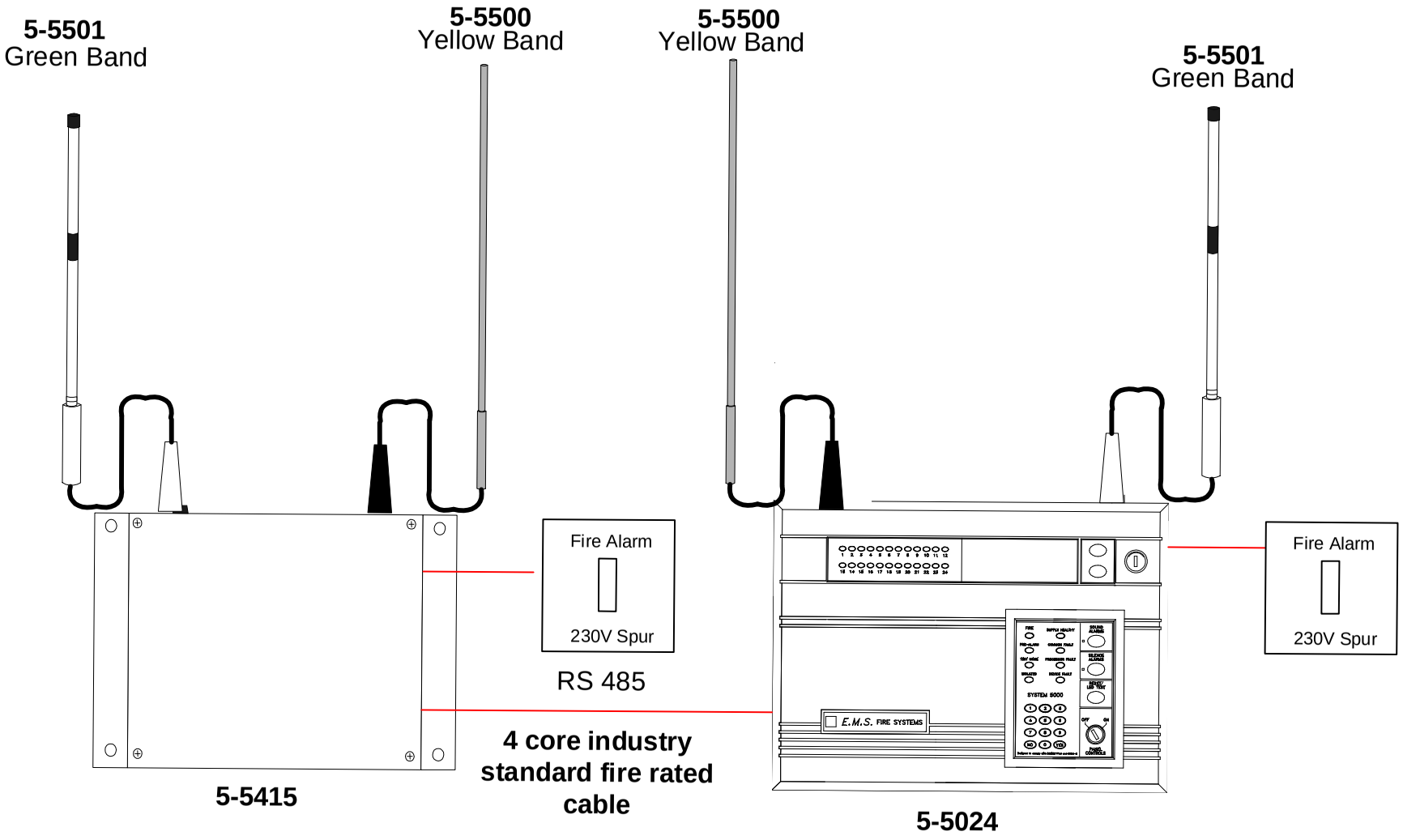
7

Typical LAN Panel Layout Including LAN Module and VHF Remote Receiver



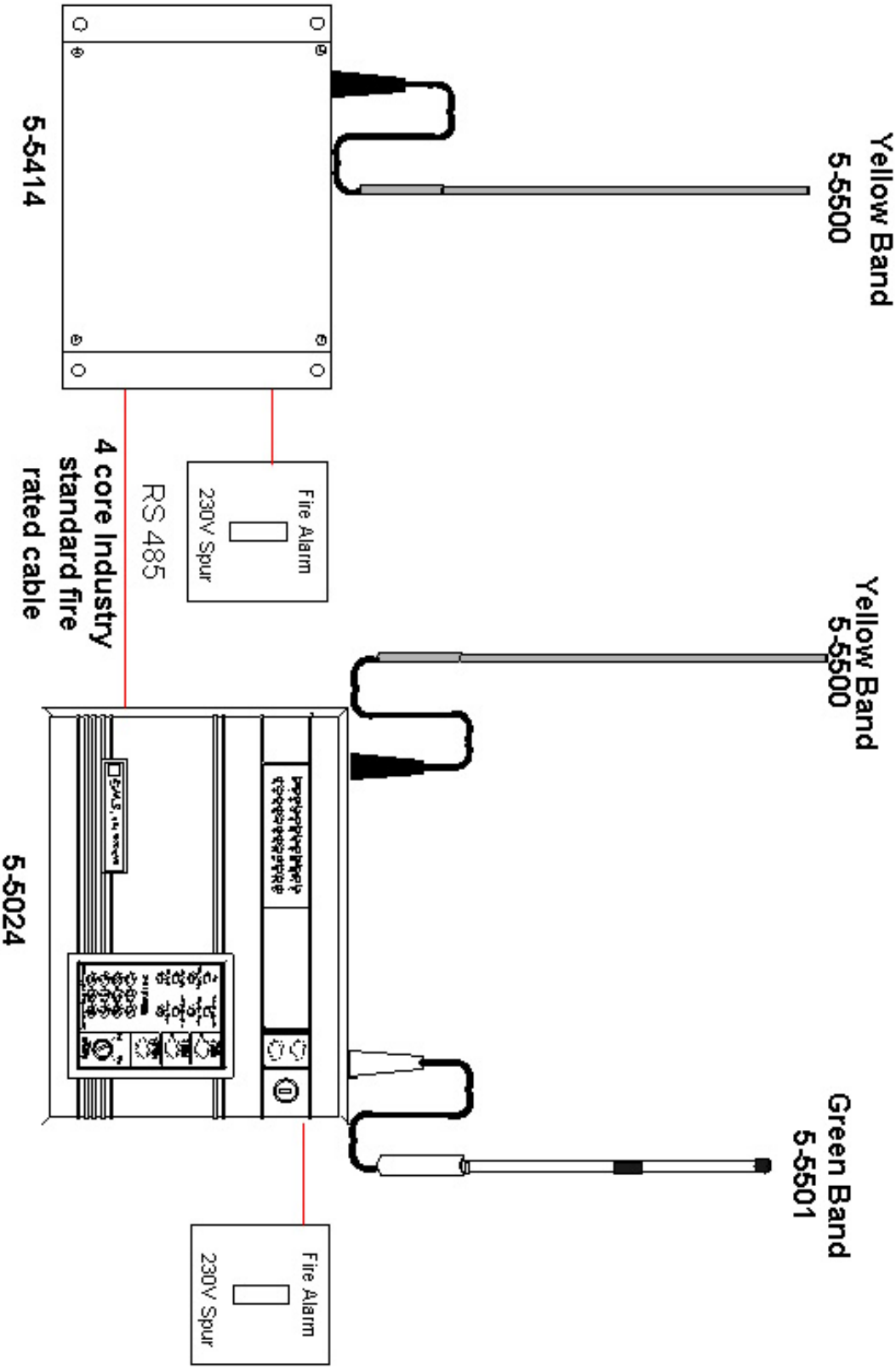
Note: All panels and aerials to be at least 2m apart
Maximum cable run for RS485 Bus 1 Km

Typical Panel Layout including a VHF/UHF Transceiver



Note: All panels and aerials to be at least 2m apart
Maximum cable run for RS485 Bus 1Km

Typical Panel Layout Including VHF Remote Receiver



Note: All panels and aerials to be at least 2m apart
Maximum cable run for RS485 Bus 1Km

10

12 Device Installation

12.1 Radio Call Point

Ensure that all Call Points are sited in accordance with the survey and design details. All Call Points must be surface mounted.

Insert the Call Point key as shown in Figure 8.

Remove the front cover. (See Figure 9).

Figure 8

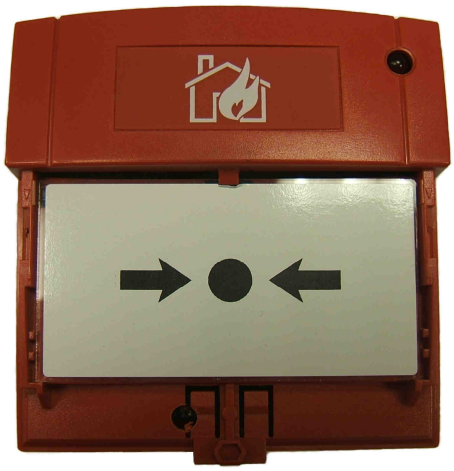


Figure 9

Remove the resettable element. (Also retain this for future use) This will expose the 2 internal assembly fixing screws (as shown in Figure 10).

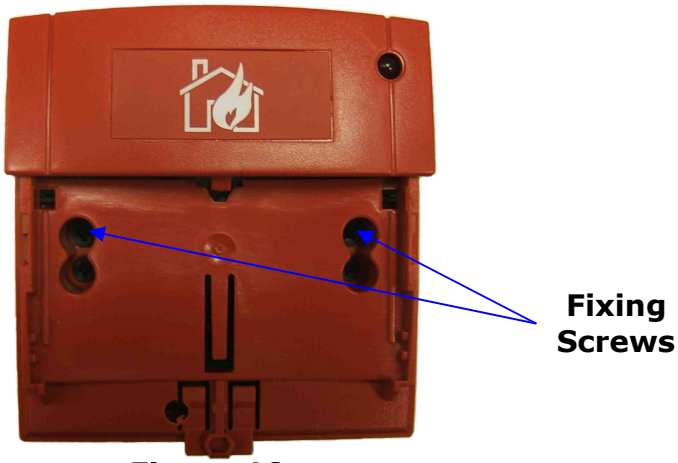


Figure 10

Remove the fixing screws and separate the back box from Transmitter / Battery section.

Mount the back box 1.4m from the floor, using suitable fixings and fasteners. A minimum of 2 mounting holes must be used. Countersunk head screws must be used to avoid the possibility of causing damage to the internal components.

Locate the Transmitter/Battery section into the back box, ensuring that the tamper switch operates correctly. The switch should also make contact with the rear of the back box/wall. (Established by the switch "clicking").

Now replace the internal assembly fixing screws. **Care must be taken, as over tightening of the screws can prevent the element dropping on activation.** Finally, reapply the element and fix the front cover back into place.

12.2 Radio Sounder

Ensure that all sounders are sited in accordance with the survey and design details. Remove the two assembly screws from the front of the sounder. This will allow the main Transmitter section to be separated from the Battery/Back box section. (See Figure 11).

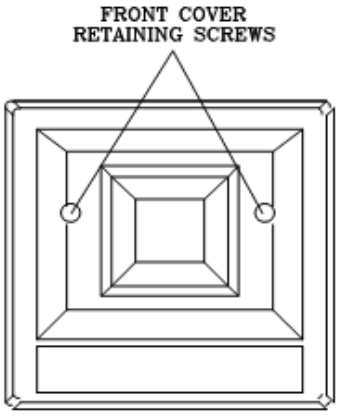


Figure 11

Remove the batteries to expose the mounting holes as shown in Figure 12.
Affix the back box to the wall using no.8 countersunk screws with suitable fixings. Ensure that the Sounder orientation is correct and that countersunk head screws are used so as to prevent the possibility of damaging the internal components.

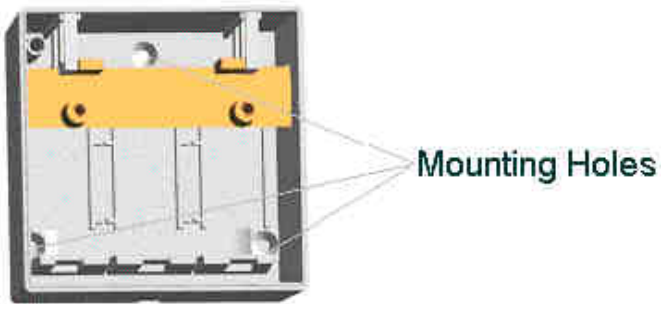


Figure 12

Insert the 3 x AA cells and 3 x C cells batteries as shown below, ensure the supplied battery ribbon is wrapped around the first AA cell to enable easy removal of the batteries at a future date. (As Figure 13).

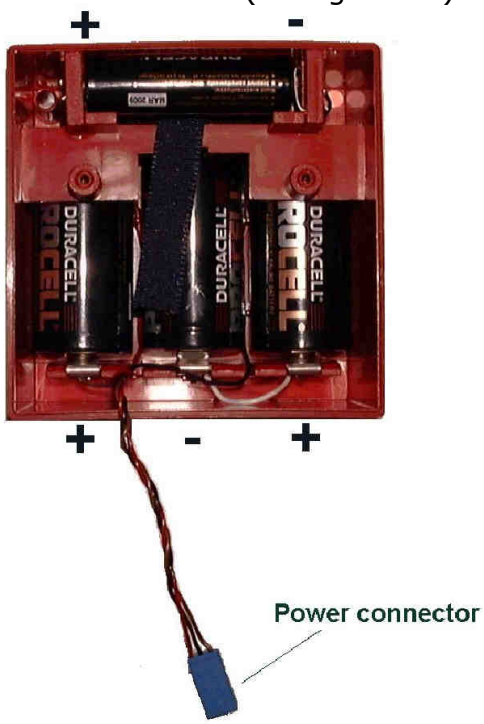


Figure 13

Note: Observe correct battery polarity as shown above.

Connect the power lead from the back box to the front unit. Locate the Transmitter section into the back box, securing in place by the two assembly screws.

12.3 Radio Detectors

Ensure that all Detectors are sited in accordance with the survey and design details and that, wherever practical, the red LED faces the main entrance to the room.

If the Detectors are complete, remove the ceiling mounting plate by first disengaging the detector head by turning it counter clockwise. This exposes the Radio PCB (see Figure 14).

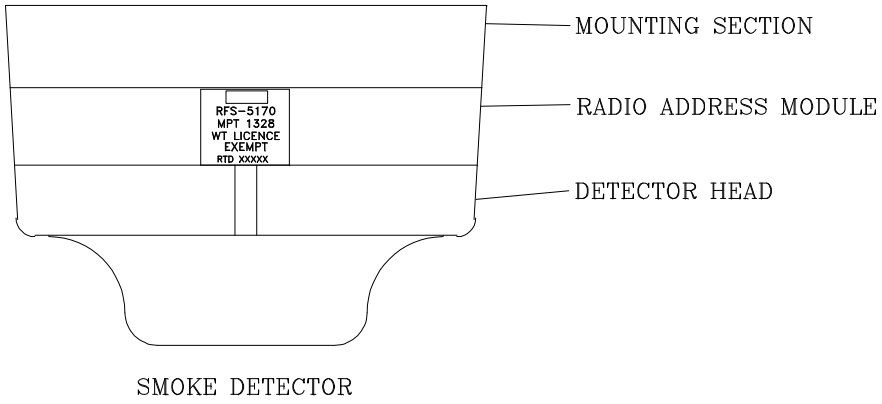


Figure 14

Disengage the ceiling mount by pressing down the locking pin (see Figure 15) and turning the radio module counter clockwise whilst pushing it against the ceiling mount.

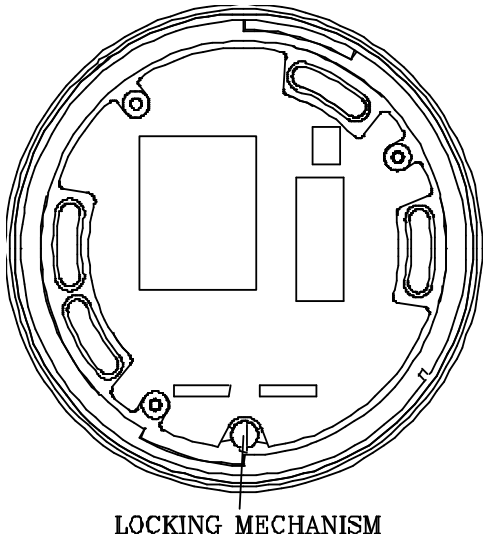


Figure 15

The ceiling mount will now be available for fixing to the ceiling.

Ensure that the Detector head is suitably stored so as to prevent the possibility of accidental damage.

Fix the ceiling mounting plate to the ceiling using suitable fixings and fasteners. A minimum of two mounting holes must be used.

It is important that fastener heads are flush or sub-flush with the internal surface of the ceiling mount, to avoid the risk of damaging the battery PCB.

Important Notice:

To all installers and commissioning engineers. The EMS Smoke Detectors are supplied with their smoke sensitivity set to the standard sensitivity setting, 2.3%. (Switches 1 Off & 2 On). The detectors switch settings and their relevant sensitivity comparisons are shown below:

OPTICAL DETECTOR SETTINGS

	Level 1	Level 2	Level 3	Level 4
Smoke Sensitivity % per M	High 1.6%	Std 2.3%	Low 3.0%	3.0% + AVF*
Switch Settings	1 & 2 Off	1 Off 2 On	1 On 2 Off	1 & 2 On

***AVF = Accelerated Alarm Verification to prevent false alarms due to transient smoke.**

The EMS Heat Detectors are supplied with their temperature sensitivity set to medium setting, 70 °C fixed. (Switches 1 On & 2 Off). The detectors switch setting and their relevant sensitivity comparisons are shown below:

HEAT DETECTOR SETTINGS

	Rate Of Rise	Standard Sensitivity	Medium Sensitivity	Low Sensitivity
Temperature	58°C	58°C	70°C	82°C
Switch Settings	1 & 2 Off	1 Off 2 On	1 On 2 Off	1 & 2 On

Please Note:

- The final commissioning, system sensitivity detection settings and hand over of the Radio Fire System to the end user is the responsibility of the fire installation contractor.

To reassemble the detector, locate the Transmitter/Battery section into the fixed ceiling mount (ensuring that locating lugs line up) and turn clockwise to achieve a positive location.

Locate the detector head to the fixed module, turning clockwise to achieve a positive location.

12.4 Input/Output Units

Ensure that all I/O Units are sited in accordance with the survey and design details.

Remove the two lid retaining screws situated on the front cover. The front section of the unit can now be removed.

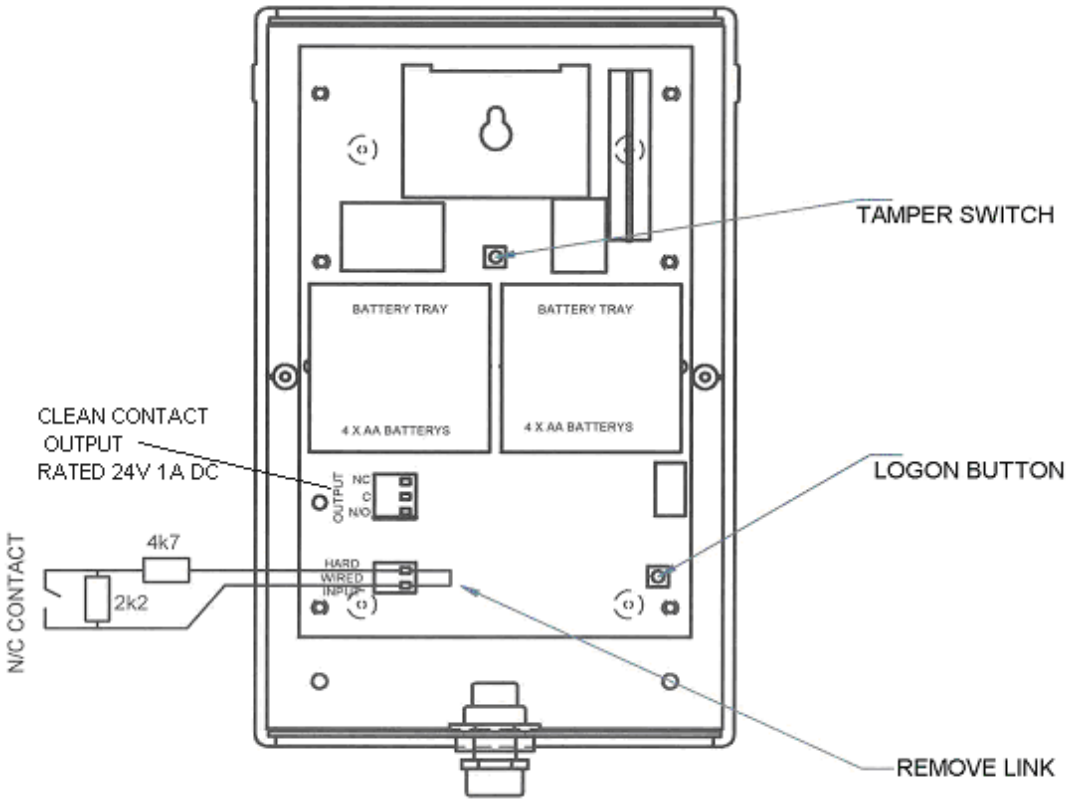


Figure 16

Offer the unit up to the wall and using the back plate as a template mark out the three fixing holes. The unit can be fixed to the wall and all external wiring connections made (see drawing P04242).

When all connections have been made to the unit the lid can be re-fixed.

NOTE: A metal box version is available, which has the same input and output capability with the addition of external aerials.

12.5 Combined Sounder Sensors

Ensure that all sounder sensors are sited in accordance with the survey and design details and that, wherever practical, the red LED faces the main entrance to the room.

The sounder sensor is shown in Figure 17 and consists of two separate sections.

The mounting plate is shown in Figure 18 and can be removed by turning the mounting plate whilst holding the sounder/sensor section.

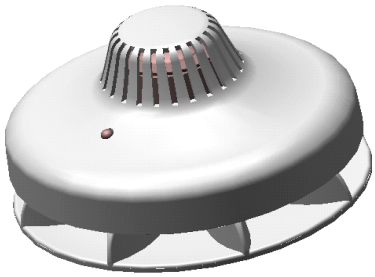


Figure 17

Figure 18

The mounting plate will now be available for fixing to the ceiling. Ensure that the main section is suitably stored so as to prevent the possibility of accidental damage.

Fix the ceiling mounting plate to the ceiling using suitable fixings and fasteners. A minimum of two mounting holes must be used. It is important that fastener heads are flush or sub-flush with the internal surface of the ceiling mount, to avoid the risk of damaging the head unit.

Important Notice:

To all installers and commissioning engineers. The EMS Combined Sounder Detectors are supplied with their sensitivities set to a standard sensitivity setting. The detectors switch setting and their relevant sensitivity comparisons are shown below:

- **Optical Sensor Sounder (53-5191)**

The Optical Sounder Sensor is capable of 4 different sensitivity settings as shown below.

	Level 1	**Level 2**	**Level 3**	**Level 4**
Smoke Sensitivity % per M	High 1.6%	**Std** 2.3%	Low 3.0%	3.0% + AVF*
Switch Settings	1 & 2 Off	1 Off 2 On	1 On 2 Off	1 & 2 On

*AVF = Accelerated Alarm Verification to prevent false alarms due to transient smoke.

- **Heat Sensor Sounder (53-5192)**

	Rate Of Rise	**Standard Sensitivity**	**Medium Sensitivity**	**Low Sensitivity**
Temperature	58ºC	58ºC	70ºC	82ºC
Switch Settings	1 &2 Off	1 Off 2 On	1 On 2 Off	1 & 2 On

*AVF = Accelerated Alarm Verification to prevent false alarms due to transient smoke.

Please Note:

The Final commissioning, system sensitivity detection settings and hand over of the radio fire system to the end user is the responsibility of the fire installation contractor.

- **Multisensor Sounder Set Into SINGLE SMOKE or SINGLE HEAT Mode (5-5190)**

ZR432 In Smoke Only Mode

Sw 1	Sw 2	Sw 3	Sw 4	Sw 5	Sw 6	Sw 7	Mode Of Operation
Off	Off	Off	On	Off	X	Off	High Sensitivity
On	Off	Off	On	Off	X	Off	Normal Sensitivity
Off	On	Off	On	Off	X	Off	Low Sensitivity
On	On	Off	On	Off	X	Off	Low Sensitivity + AVF

ZR432 In Heat Only Mode

Sw 1	Sw 2	Sw 3	Sw 4	Sw 5	Sw 6	Sw 7	Mode Of Operation
Off	Off	Off	Off	On	X	Off	58ºC ROR
On	Off	Off	Off	On	X	Off	58ºC fixed
Off	On	Off	Off	On	X	Off	70ºC fixed
On	On	Off	Off	On	X	Off	82ºC fixed

X – Not Used
AVF – Average
ROR – Rate Of Rise

Dip Switches 1 & 2 remain as heat level/optical sensitivity settings
Dip Switch 3 has no effect whilst single detector mode
Dip Switches 4 & 5 are heat and smoke settings.
Dip Switch 7 is OFF compatibility mode disabled.

Multisensor Sensitivity

The Multisensor set into single heat mode has new specified sensitivity levels of detection. These are supported by current standards (EN54 part 7).

- **Multisensor Set into Both SMOKE & HEAT Mode**

ZR432 in Dual Mode

Sw 1	Sw 2	Sw 3	Sw 4	Sw 5	Sw 6	Sw 7	Heat Band	Optical Sensitivity
Off	Off	Off	On	On	X	Off	58ºC	Normal
On	Off	Off	On	On	X	Off	58ºC	Medium
Off	On	Off	On	On	X	Off	58ºC	Low
On	On	Off	On	On	X	Off	58ºC	Low+AVF

Sw 1	Sw 2	Sw 3	Sw 4	Sw 5	Sw 6	Sw 7	Heat Band	Optical Sensitivity
Off	Off	On	On	On	X	Off	72ºC	Normal
On	Off	On	On	On	X	Off	72ºC	Medium
Off	On	On	On	On	X	Off	72ºC	Low
On	On	On	On	On	X	Off	72ºC	Low+AVF

Sw 1	Sw 2	Sw 3	Sw 4	Sw 5	Sw 6	Sw 7	Heat Band	Optical Sensitivity
Off	Off	Off	Off	Off	X	Off	58ºC	Normal
On	Off	Off	Off	Off	X	Off	58ºC	Medium
Off	On	Off	Off	Off	X	Off	58ºC	Low
On	On	Off	Off	Off	X	Off	58ºC	Low+AVF

Sw 1	Sw 2	Sw 3	Sw 4	Sw 5	Sw 6	Sw 7	Heat Band	Optical Sensitivity
Off	Off	On	Off	Off	X	Off	72ºC	Normal
On	Off	On	Off	Off	X	Off	72ºC	Medium
Off	On	On	Off	Off	X	Off	72ºC	Low
On	On	On	Off	Off	X	Off	72ºC	Low+AVF

X – Not Used
AVF – Average

Algorithm 1 Characteristics: If there is an increase in heat detection, the algorithm will set the optical sensitivity setting one level higher. I.e. the optical detector becomes more sensitive.

Algorithm 2 Characteristics: If there is no increase in heat detection, the algorithm will set the optical sensitivity setting one level lower. I.e. the optical detector becomes less sensitive.

Dip Switches 1 & 2 remain as heat level/optical sensitivity settings
Dip Switch 3 will control the heat/optical sensitivity band.
Dip Switches 4 & 5 are both ON or both OFF For Algorithms 1 or 2.
Dip Switch 7 is OFF compatibility mode disabled.

To reassemble the detector, locate the head section into the fixed ceiling mount (ensuring that locating lugs line up) and turn clockwise to achieve a positive location.

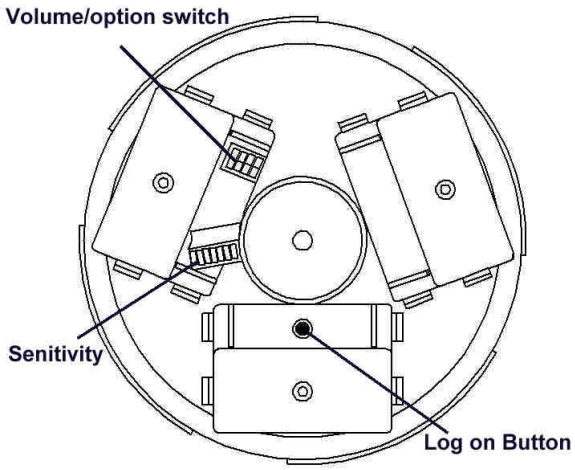


Figure 19

Within the Volume/Option switches, switch number 1, when in the "ON" position sets the tamper to disabled. However flicking the switch to the "OFF" position enables the tamper feature. This would be set before the device is set into it's final location.

13. Controller Information

TECHNICAL INFORMATION FOR THE 5000 CONTROLLER

Dimensions:	330mm x 450mm x 116mm
Operating Frequencies:	VHF – 173.2 MHz – 173.5MHz (receiver) UHF – 458.5 MHz – 459.5 MHz (transmitter)
Operating Temperature:	-10 to 55 degrees C
Humidity:	Up to 75% non-Condensing.
Channel Spacing:	25 kHz
Output Transmitter Power:	0.75W (500 mW) (+ 27DBH)
Supply:	240v 50 Hz
Current Consumption:	260mA in standby
Operating Voltages:	24v DC nominal
Battery space:	2 x 12volt 9Ah batteries (not supplied) EMS only recommend: Panasonic Model No: UP-RW1245P1 or a battery of equivalent specification
Inputs:	1 x 27v DC
Outputs:	2 x 0.25amp 24v DC sounder outputs 2 x auxiliary fire relays 2 x auxiliary fault relays 1 x RS 485 serial port 1 x RS 232 serial port
Standards:	Designed to comply to BS5839 part 4 and EN54 - 2
Recommended battery replacement intervals:	Standby 9Ah batteries – 2 years Lithium clock and RAM batteries – 5 years (Re-order no – 5-5812)

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Fire Industry Association

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